# DEPARTMENT OF CALIFORNIA HIGHWAY PATROL

## PROPOSED TEXT

TITLE 13, CALIFORNIA CODE OF REGULATIONS
DIVISION 2, CHAPTER 7, AMEND ARTICLE 1, REPEAL ARTICLES 2 THROUGH 10 AND ARTICLE 15

**CARGO SECUREMENT STANDARDS**
**(CHP-R-2006-07)**
(OAL File Number)

*Existing text:* .....Times New Roman 12 point font.
*Additions:*.....Times New Roman 12 point font with single underline.
*Deletions:*.....~~Times New Roman 12 point font with strikethrough.~~

**Title 13, California Code of Regulations,**
**Chapter 7. ~~Loading Regulations~~ Cargo Securement Standards**
**Article 1. ~~Binders~~ Protection Against Shifting and Falling Cargo**

**§1300. Scope of Regulations.**

~~This article shall apply to binders, binder attachments, and anchorages used for securing loads in accordance with regulations in subsequent articles of this subchapter.~~

~~Note: Authority and reference cited: Sections 24005.2, 29200, 29800, 30800, 31510, 31520, 31530 and 31540, Vehicle Code.~~

(a) ***Applicability.*** Unless otherwise indicated within a specific section, the provisions of this chapter shall apply to farm labor vehicles and the vehicles listed in Vehicle Code Sections 34500 and their operation.

(b) ***Incorporation by Reference.*** Motor carriers and drivers engaged in interstate and intrastate commerce shall comply with the federal Protection Against Shifting and Falling Cargo

regulations contained in Title 49, Code of Federal Regulations, Part 393, as those regulations now exist or are hereafter amended.

(c) ***Referenced Regulations.*** Copies of Title 49 CFR, can be obtained from:

SUPERINTENDENT OF DOCUMENTS

U.S. GOVERNMENT PRINTING OFFICE

PO BOX 371954

PITTSBURG, PA 15250-7954

(202) 512-1800

Internet purchases: http//www.access.gpo.gov/su_docs/sale.html

(d) ***Limited application.***

(1) This Chapter does not apply to the transportation of a pole on a pole dolly by a public utility company or a local public agency engaged in the business of supplying electricity or telephone service, by the Department of Transportation, or by a licensed contractor in the performance of work for a public utility company, a local agency, or the Department of Transportation, when the transportation is between storage yards or between a storage yard and job location where the pole is to be used. However, no more than nine poles shall be transported on a dolly if any of those poles exceeds a length of 30 feet. If poles 30 feet or less are transported by a pole or pipe dolly, no more than 18 poles shall be transported. A pole shall be adequately secured when being transported on a dolly, to prevent shifting or spilling of a load.

(2) This Chapter does not apply to a farmer transporting his or her own hay or straw, incidental to his or her farming operation, if that transportation requires that the farmer use a highway, except that this subdivision does not relieve the farmer from loading and securing the hay or straw in a safe manner.

(e) ***Exemptions***. The Commissioner may grant exemptions from any of the requirements of this chapter when, in his judgment, requests appear reasonable, or the results intended by these regulations can be accomplished by alternate methods of compliance. However, no exemption will be granted if, in the opinion of the Commissioner, the exemption would compromise the safety requirements of these regulations. In addition, any exemption granted by the Commissioner is nontransferable and may be rescinded at any time for cause.

(1) Application for Exemption. An application for exemption shall be made in writing to the Commissioner, and it shall include the following data:

Reason for requesting an exemption

Alternate method(s) of compliance

When relevant, the make and model, vehicle identification number, and license number of the vehicle for which the exemption is being requested

The application shall be mailed to:

CALIFORNIA HIGHWAY PATROL

ENFORCEMENT SERVICES DIVISION

POST OFFICE BOX 942898

SACRAMENTO, CA 94298-0001

(2) Copy of Exemption. A copy of any exemption granted shall be carried in the vehicle(s) for which it was issued at all times, unless specified otherwise in the exemption, and shall be presented for inspection upon demand by any authorized representative of the Department.

(3) Blanket Exemptions. The provisions of this subsection do not apply to any blanket exemptions the Commissioner may elect to issue. A blanket exemption is an exemption from a

particular provision of this subchapter granted to all vehicles, or vehicles manufactured on or after a specified date, pending a change in these regulations.

NOTE: Authority cited: Section 2402 and 34500.3, Vehicle Code. Reference: 34500 and 15210 Vehicle Code.

~~**1301**. Definitions.~~

~~(a) A "binder" is a chain, wire rope, manila rope, steel strapping, synthetic fiber rope, or synthetic webbing used to secure a load to a vehicle. The term "binder" includes binder attachments which function with the binder when in use.~~

~~(b) A "crossbinder" is a binder which extends over the top of a load at an angle of approximately 90 degrees to the longitudinal centerline of the vehicle and is attached to opposite sides of the vehicle.~~

~~(c) A "longitudinal binder" is a binder which extends over the top of a load approximately parallel to the longitudinal centerline of the vehicle and is attached to the ends of the vehicle.~~

~~(d) A "perimeter binder" is a binder which extends around the sides of a load and is attached to the ends of the vehicle.~~

~~(e) A "rack binder" is a binder which extends between and is attached to the vertical members of opposite side racks.~~

~~(f) A "binder attachment" is a device temporarily or permanently attached to a binder for securing the binder to an anchorage or for tensioning or locking the binder over a load.~~

~~(g) "Anchorage" is that vehicle part or permanently attached fixture to which a binder or binder attachment is secured. Anchorages are not considered as any part of a binder or binder attachment for the purposes of this article.~~

~~(h) "Breaking strength" is the force in pounds required to part a binder under load.~~

(i) "Load rating" is the rated strength of a binder or binder attachment as established by the manufacturer or final assembler in accordance with the requirements of Section 1303.

Note: Authority and reference cited: Sections 29200, 29800, 30800, 31510, 31520, 31530 and 31540, Vehicle Code.

**1302**. General Requirements.

Binders shall be in compliance with the following general requirements:

(a) Eyes--Wire Rope. Eyes may be formed at the ends of wire rope by splicing or by the use of swaged fittings, pressed sleeves, zinc-filled socket fittings, or U-bolt clips. U-bolt clips shall be spaced as illustrated in Figure 5, and shall be attached with the base of the clip against the long or live end of the rope, and the U-bolt over the dead end. Molly hogan spliced eyes are prohibited (See Figure 1).

Fig. 1. Construction of Molly Hogan Spliced Eye

(b) Eyes--Manila and Synthetic Fiber Rope. Eyes shall, if used in manila or synthetic fiber rope, be formed by using a eye splice, a poke-through knot or bowline. The "poke through" knot must be formed so that when fully tightened for travel at least six inches of tail exists. Eyes formed by metal devices such as hog rings, U-bolt clips, or swages, are prohibited in manila or synthetic fiber rope.

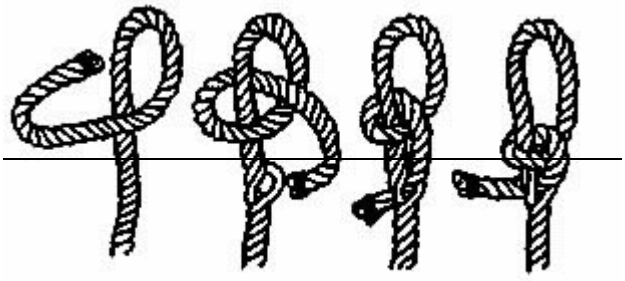


Fig. 1A. Construction of an Eye by a "Poke-Thru" Knot.

~~(c) Snubbers. Snubbers or other devices which are designed to stretch with the movement of the load shall not be used with binders.~~

~~(d) Anchorages. Anchorages shall have design strengths not less than those which are required of the binders attached to them.~~

~~(e) Binder Attachment. No more than one binder shall be attached to the same anchorage or tightening device.~~

~~(f) Sharp Edges. Binders shall not contact any sharp edges on the vehicle or load.~~

~~(g) Binder Tensioning. Each binder shall be provided with a locking tightener of a type designed for the binder and shall be properly tensioned while in use.~~

~~(h) Binder Tightener Application. Binders shall be applied at an approximately 90-degree angle to the spindle of any ratchet or winch-type tightener.~~

~~(i) Continuous Binder. If a single continuous binder is used in lieu of two binders, each segment which serves the function of a separate binder shall be independently anchored so that failure of one segment will not cause failure of the other segment.~~

~~Note: Authority and reference cited: Sections 29200, 29800, 30800 31510, 31520, 31530 and 31540, Vehicle Code.~~

**1303**. Specifications.

(a) Chain shall meet Federal Specification RR-C-271B, August 28, 1973. Binder chains shall be of welded link construction and at least one link in every 5 feet of chain shall carry the manufacturer's permanent and distinctive mark or symbol identifying the grade and manufacturer of the chain.

(b) Wire rope shall meet Federal Specification RR-W-410c, September 18, 1968.

(c) Manila rope shall be Type M, Class I rope, and shall meet Federal Specification T-R-605b, Amendment-3, April 17, 1973.

(d) Steel strapping shall be new and shall meet Federal Specification QQ-S-781e, Amendment-4, February 3, 1966, for Type I, nailless heavy-duty strapping.

(e) Synthetic fiber rope shall meet the following specifications:

(1) The rope shall be made of virgin No. 1 material.

(2) The rope shall be treated for ultraviolet resistance.

(3) There shall be one orange surface marker in each rope strand .

(4) Use of solid orange rope is prohibited.

(5) Each manufacturer shall identify his rope with a concealed inner tape bearing his name or registered trademark. The inner tape may be unmarked but of a distinctive color in rope manufactured before January 1, 1985.

(6) Rope breaking strength shall not be less than, and elongation shall not be more than, that listed in Table I as determined by the average of at least three consecutive tests with no test measurement more than 10% under the specified breaking strength nor more than 10% over the permitted elongation.

~~TABLE I~~

| Nominal Rope Diameter (in.) | Breaking Strength (lb) | Elongation Percentage at Pounds of Applied Force | | | |
|---|---|---|---|---|---|
| | | 3% | 6% | 9% | 12% |
| 3/8 | 2,500 | | 200 | | 500 |
| 7/16 | 3,300 | | 230 | | 660 |
| ½ | 4,000 | | 320 | | 800 |
| 5/8 | 6,000 | | 480 | | 1,120 |
| ¾ | 8,000 | 300 | | 1,080 | |
| 1 | 12,750 | 400 | | 1,800 | |

~~(7) Breaking strength and elongation tests for ropes listed in Table I shall be performed in accordance with Cordage Institute Standard Test Methods for Fiber Rope, revised June, 1980.~~

~~(f) Synthetic webbing binders shall meet the following specifications:~~

~~(1) The webbing shall be of virgin No. 1 material.~~

~~(2) The final assembler's name or registered trademark shall be indelibly printed on the webbing in a color which contrasts with the webbing at intervals of 5 ft or less or sewn into a label of 1 1/2 - by- 3 1/2 in. minimum dimensions permanently attached within 5 ft of one end of the binder assembly where it shall be visible while the binder is in use. The lettering shall be of a color contrasting to the color of the label. Binder attachments (hardware) used in webbing binder assemblies shall be identified by the manufacturer's or final assembler's name or registered trademark on each piece.~~

~~(3) Webbing binders manufactured after January 1, 1982, shall have the load rating indelibly printed or sewn into a label adjacent to or combined with the final assembler's name or registered trademark. The load rating shall be in whole numbers using Arabic numerals or a combination of Arabic numerals and the Roman numeral "M" to designate thousands.~~

~~(4) Webbing binders shall be marked either by an indelible orange-colored dot not less than 1/2 in. in diameter applied at intervals of 5 ft or less, or by an interwoven orange surface marker that runs the full length of the binder, to indicate certification to the department for use on regulated loads. If the webbing material is solid orange in color, the indelible dot or interwoven surface marker shall be black.~~

~~(5) Webbing binder assemblies, including their "sew patterns" and hardware or loops, shall be load rated by the final assembler at not more than 80% of the breaking strength or force required to cause permanent distortion, whichever is less. Webbing binder assemblies shall be tested in a straight pull of the complete assembly.~~

~~(6) The load rating of binder attachments shall not be less than the load rating of the webbing material to which they are attached.~~

~~(7) Elongation of webbing material and binders assembled for use shall not exceed 18% after the application of force equivalent to the load rating of the binder.~~

~~(8) Webbing binders shall not show any permanent deformation when a force equal to the load rating is applied.~~

~~(9) Webbing binders shall be treated to resist weathering, moisture absorption, abrasion, and ultraviolet deterioration.~~

~~(10)Webbing binder ends shall be protected, treated, or sealed to prevent raveling.~~

(g) Binder attachments shall have a design strength or load rating not less than that required of the binders to which they are attached.

(h) Chain hooks (Fig. 2) shall be of the clevis-type except as follows:

(1) Closed-eye chain hooks of the appropriate size and grade may be used when the hook grade is identified by the manufacturer's permanent and distinctive mark.

(2) Chain binder assemblies with chain hooks joined by flash- or butt-welded connecting links shall bear the manufacturer's permanent and distinctive link grade mark.

(3) Manufacturers shall provide the department with a list of the marks of identification used on closed-eye chain hooks and chain assemblies.

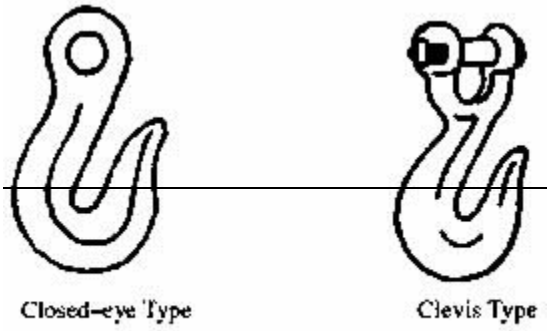


Figure 2. Chain Grab Hooks

Note: Authority and reference cited: Sections 24005.5, 29200, 29800, 30800, 31510, 31520, 31530 and 31540, Vehicle Code.

**1304**. Testing and Certification.

(a) Every assembler of binders or binder assemblies subject to the requirements of this article shall, before the device is offered for sale, conduct a test assuring compliance with those

~~requirements. A report on the test results certifying compliance shall be maintained by the assembler.~~

~~(b) The Department may at any time request from the assembler, a copy of the test report specified in preceding subsection (a) showing proof of compliance of the device with the provisions of this Article. If such proof of compliance is not provided within 30 calendar days of written notice from the Department, the Department may prohibit the use of the binder or binder assembly on regulated loads within this state.~~

~~(c) Test data shall include the following information:~~

~~(1) The date of the test report.~~

~~(2) The date tests were conducted.~~

~~(3) The standard or regulation with which the device complies.~~

~~(4) A description of the device.~~

~~(5) The type of material used for each major component.~~

~~(6) The actual results obtained for each test or measurement required by this Article.~~

~~Note: Authority and reference cited: Sections 24005.5, 29200, 29800, 30800, 31510, 31520, 31530 and 31540, Vehicle Code.~~

~~**1304.1.** Test Samples.~~

~~Note: Authority cited: Sections 29200, 29800, 30800, 31510, 31520, 31530, and 31540, Vehicle Code. Reference: Sections 29200, 29800, 30800, 31510, 31520, 31530 and 31540, Vehicle Code.~~

~~**1305**. Condition and Use.~~

~~Binders and anchorages shall be maintained in good condition. The use of binders under any of the following conditions is prohibited.~~

~~(a) Chain. Chain binders shall not be used when any of the following defects are present:~~

~~(1) Cracked welds or links in binders or binder attachments~~

~~(2) Bent, twisted, stretched, or collapsed links~~

~~(3) Links weakened by gouges or pits~~

~~(4) Obviously worn links or any other evidence of link loss of strength~~

~~(5) Chain repaired or connected with links of any type other than those illustrated in Figures 3 and 4.~~


Fig. 3. Permitted Types of Repair and Connecting Links for Proof Coil Chain Only

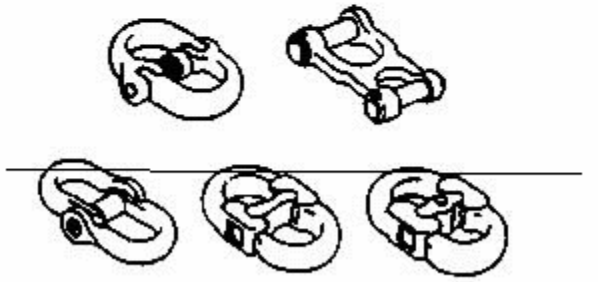


Fig. 4. Permitted Types of Repair and Connecting Links for Alloy, High Test, and Proof Coil Chain

~~(b) Wire Rope. Wire rope binders shall not be used when any of the following defects are present:~~

~~(1) Stranded, crushed, kinked, badly worn, rust pitted, or bird-caged wires~~

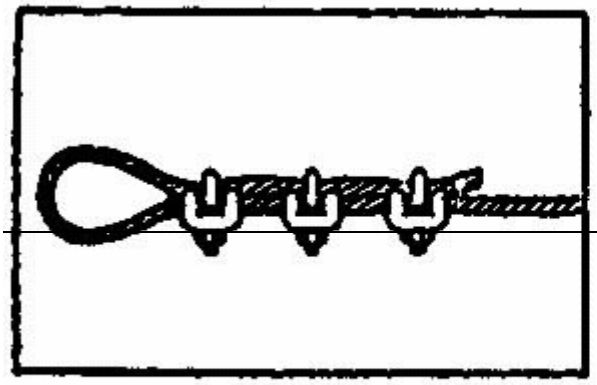
~~(2) Twelve or more broken wires in a lay length~~

~~(3) Any evidence of loss of strength, such as a marked reduction in diameter~~

~~(4) U-bolt clip installation other than specified and illustrated in Figure 5~~

~~(5) Contractor's knot and clip (See Figure 6)~~

~~(6) Molly Hogan spliced (quick) eyes (See Figure 1).~~



| *Rope Diameter Inches* | *Number of Clips (Minimum)* | *Center to Center Spacing of Clips Inches* |
|---|---|---|
| 1/8 | 2 | 1 1/8 |
| 3/16 | 2 | 1 1/8 |
| 1/4 | 2 | 1 1/2 |
| 5/16 | 2 | 1 7/8 |
| 3/8 | 2 | 2 1/4 |
| 7/16 | 3 | 2 5/8 |
| 1/2 | 3 | 3 |
| 9/16 | 3 | 3 1/2 |
| 5/8 | 3 | 3 3/4 |
| 3/4 | 4 | 4 1/2 |

Fig. 5. U-Bolt Clips on Wire Rope

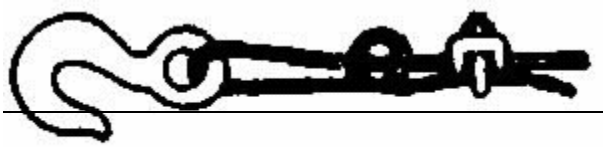


Fig 6. Contractor's Knot

~~(c) Manila Rope. Manila Rope binders shall not be used when any of the following defects are present:~~

~~(1) Crushed, badly worn, or broken rope strands~~

~~(2) Any evidence of loss of strength, such as a marked reduction in diameter~~

~~(3) Knots formed for the purpose of connecting or repairing binders.~~

~~(d) Steel Strapping. The use of more than two pieces of steel strapping in a single binder is prohibited.~~

~~(e) Synthetic Fiber Rope. Synthetic fiber rope shall not be used when any of the following defects are present:~~

~~(1) Burned or melted fibers except on heat-sealed ends~~

~~(2) Evidence of excessive wear in exterior or interior fibers~~

~~(3) Any evidence of loss of strength, such as a marked reduction in diameter~~

~~(4) Knots formed for the purpose of connecting or repairing binders.~~

~~(f) Synthetic Webbing. Synthetic webbing binders shall not be used when any of the following defects or conditions are present:~~

~~(1) Burned or melted webbing except on heat-sealed ends~~

~~(2) Cuts, fraying, or wear to the point of exposing or affecting any core strand~~

~~(3) Webbing stretched to permanent distortion~~

~~(4) Knots, alterations, joining, or repairs using any method other than the manufacturer's original construction techniques~~

~~(5) Any evidence of loss of strength~~

~~(6) Required markings are no longer visible due to fade, wear, or destruction.~~

~~Note: Authority and reference cited: Sections 29200, 29800, 30800, 31510, 31520, 31530 and 31540, Vehicle Code.~~

**ARTICLE 2. BALED HAY AND STRAW -LOADING, SECUREMENT, AND TRANSPORTATION**

**1310**. Scope of Regulations.

This article shall apply to the loading, securement, and transportation of baled hay and baled straw on flatbed vehicles, except when transported by a farmer owner incidental to his farming operations in accordance with Section 30801 of the Vehicle Code.

Note: Authority cited: Section 30800, Vehicle Code. Reference: Section 30800, Vehicle Code.

**1311**. General Provisions.

General and miscellaneous provisions shall be as follows:

(a) Bales. For the purpose of this Article, bales with the dimensions of 2 1/2 by 3 1/2 by 6 feet or greater are jumbo bales. Any bale having one or more dimensions less than 2 1/2 by 3 1/2 by 6 feet is a regular bale. Unless otherwise provided, the regulations in this article apply to both jumbo and regular bales.

(b) All Binders. Binders used in the loading, securement, and transportation of baled hay and baled straw shall meet the requirements of Sections 1300 through 1305 of this title and the type and strength requirements of this section.

(c) Longitudinal Binders. Longitudinal binders shall have a breaking strength or loading rating of not less than 9,000 pounds and shall be limited to the following types:

(1) Chain

(2) Wire rope

~~(3) Manila rope~~

~~(4) Synthetic fiber rope~~

~~(5) Synthetic webbing~~

~~(d) Crossbinders. Crossbinders shall have a breaking strength or load rating of not less than 2,650 pounds and shall be limited to the following types:~~

~~(1) Chain~~

~~(2) Wire rope~~

~~(3) Manila rope~~

~~(4) Synthetic fiber rope~~

~~(5) Synthetic webbing~~

~~(e) Securement of Binders. The following provisions shall govern the securement of binders:~~

~~(1) Each binder shall be provided with a locking tightener of a type designed for it except when secured over V-boards at the top of a load as provided in Figures 1 and 2 and Section 1313(a) of this article.~~

~~(2) If the tightening device does not meet the strength requirements for the binders, additional chain or wire rope which meets such strength requirements shall be used to secure the binders together.~~

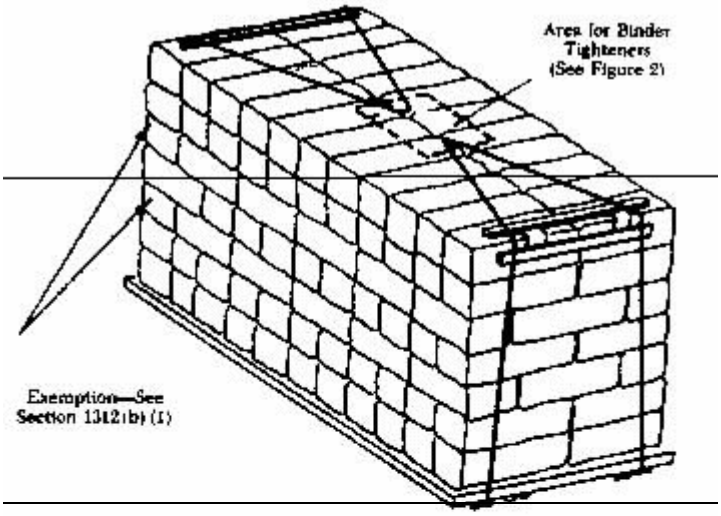



Figure 1. Longitudinal Binders
Illustrative of Sections 1311(c) and 1313(a)

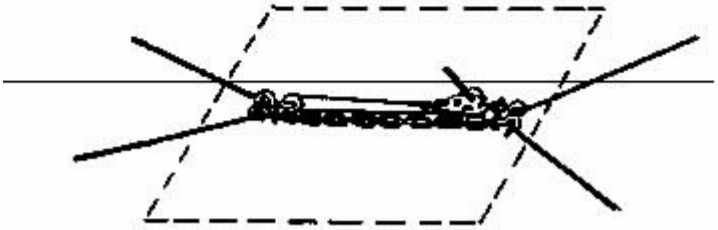


Figure 2. Binder Fastening
Illustrative of Sections 1311(c) and 1313(a)

~~(f) Spare Longitudinal Binder. At least one spare longitudinal binder shall be carried on each vehicle or combination of vehicles in addition to those required for load securement.~~

~~(g) Stability of Load. Loads shall be solidly packed, well balanced, and positioned on the vehicle so the load is stable without binders. All loading and securement requirements shall be met prior to a vehicle entering a highway and shall be so maintained en route by periodic inspection of the load. If there is any evidence of load instability, the vehicle shall be driven from the roadway and shall not again be moved on the highway until corrective load or securement adjustments are made to conform to these regulations.~~

(h) V-Boards (sometimes referred to as V-Bars). When V-boards are used, they shall be positioned at the top edge of the load beneath the binders, and shall be in compliance with the following requirements:

(1) V-boards shall consist of two parallel pieces of lumber, metal, or other material not more than 12 feet in length, attached together near each end by flexible material. V-boards more than 6 feet in length shall also be attached at the approximate midpoint.

(2) V-boards shall be of sufficient length to restrain at least one-half of each bale to which they are applied. As far as is practicable, multiple binders shall be uniformly spaced over the entire length of a V-board.

(3) Materials used in the construction of V-boards shall be of a strength not less than that of nominal size Douglas fir (1 inch by 3 inches). Lumber V-boards shall be free of strength-impairing knots.

(i) Tier. For the purposes of this article, "tier" means one layer of bales.

Note: Authority cited: Section 30800, Vehicle Code. Reference: Section 30800, Vehicle Code.

**1312**. Construction of Loads.

The following provisions shall govern the construction of loads of baled hay and straw.

(a) Jumbo Bale Placement - Sides of Load. Loads of jumbo bales shall be constructed so that the outermost bales at the sides of the load shall not be placed in the same direction in more than three successive tiers.

~~(b) Regular Bale Placement -Sides of Load. Loads of regular bales shall be constructed so that the outermost bales at the sides of the load shall not be placed in the same direction in more than two successive tiers except as follows:~~

~~(1) One bale on each side of a tier may be exempt from the above requirements up to a maximum of three tiers in succession. (See Figure 1)~~

~~(2) To provide for machine handling, one row of bales may be the width and height of the load, provided the bale lengths are placed crosswise to the vehicle and are no closer than 6 feet to either end of the load. (See Figure 3)~~

~~(c) Regular Bale Placement -Top of Load. Bale lengths in the top tier of the load shall be placed crosswise to the vehicle.~~

~~(d) Vertical Placement of Regular Bales Prohibited. Regular bales shall not be loaded on ends.~~

~~(e) Load Projection -Front and Rear. Loads which project beyond the front and/or rear of the vehicle bed shall be subject to the following limitations:~~

~~(1) No portion of the load shall extend beyond the vehicle bed into the area between a truck and trailer or semitrailer and trailer.~~

~~(2) Loads shall not extend more than one-third bale length beyond the rear of the bed surface on a single vehicle or last vehicle in a combination of vehicles.~~

~~(3) Loads may extend beyond the front end of the truck bed over the driver's compartment or sleeper berth if this portion of the load is supported by permanent, substantial steel construction, is tied into the remainder of the load by interlocking construction, and the load or supporting structure does not obstruct the view of the driver to the front or sides of the vehicle.~~

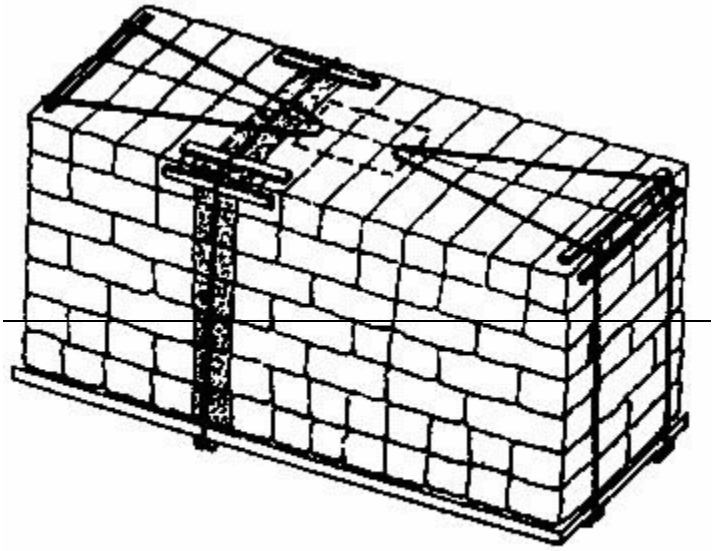


Figure 3. Nonimerlocking Bales. Single Row
Illustrative of Sections 1312(b)(2) and 1313(b)(3)

Note: Authority cited: Section 30800, Vehicle Code. Reference: Section 30800, Vehicle Code.

**1313**. Securement of Loads.

Except as provided in Section 1314, loads shall be secured by binders applied over V-boards as follows:

(a) Longitudinal Binders. All loads shall be secured by at least two longitudinal binders extending over the top of the load, attached from right front to left rear and left front to right rear so as to cross at the approximate top center of the load (Figure 4); or by one longitudinal binder extending over the front of the load with each end anchored on the front near the corners, and one binder extending over the rear of the load with each end anchored on the rear near the corners, and both binders drawn together and tightened at the approximate top center of the load. (See Figures 1 and 2)

~~(b) Crossbinders. In addition to the required longitudinal binders, loads of jumbo bales shall be secured by one crossbinder for each 6 feet of load length, and in any case, not less than four uniformly spaced crossbinders shall secure the top-tier bales at the sides of loads. The crossbinder requirements also apply to loads of regular bales when a load meets one or more of the conditions described in the subsections (1) and (2) below:~~

~~(1) Loads containing a longitudinal separation between sectional units which are not interlocked and tied together by at least two tiers for the full width of the load. (See Figure 5)~~

~~(2) Loads of two-rope bales~~

~~(c) Additional Binders. In addition to other required binders, one crossbinder shall be applied to a single row of regular bales stacked the width and height of the load with bale lengths crosswise to the vehicle bed. (See Figure 3)~~

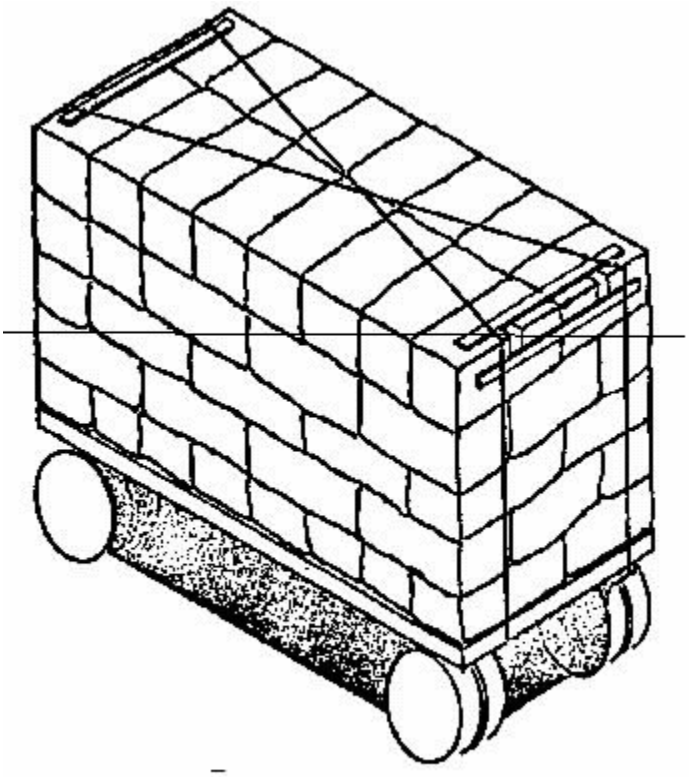


Figure 4. Longitudinal Binders
Illustrative of Section 1313(a)

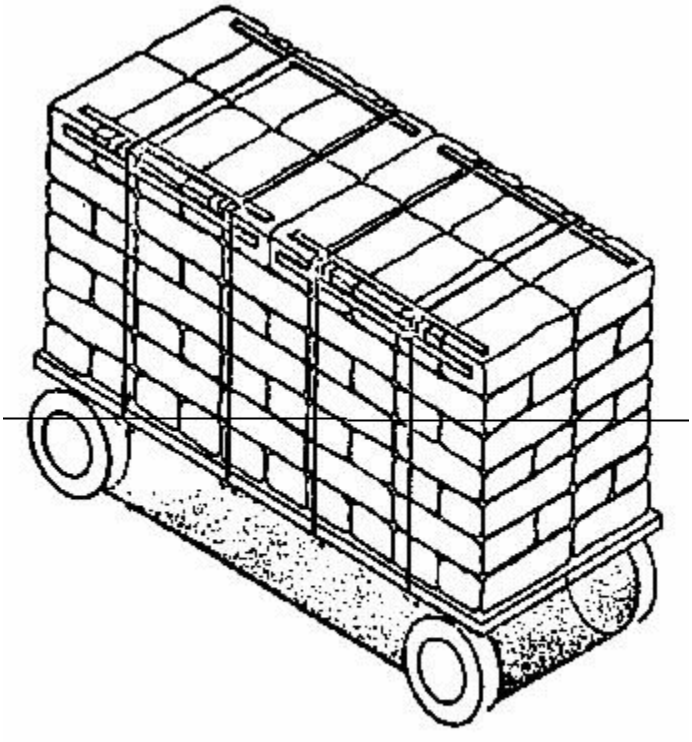


Figure 5. Crossbinders
Illustrative of Section 1313(b)(1)

NOTE: Authority cited: Section 30800, Vehicle Code. Reference: Section 30800,

Note: Authority cited: Section 30800, Vehicle Code. Reference: Section 30800, Vehicle Code.

**1314**. Alternative Securement of Jumbo Bales.

(a) Bale Size. The alternate method of securement provided in this section shall apply only to bales with dimensions not less than 2 1/2 by 3 1/2 by 6 feet.

(b) Jumbo Bale Placement - Sides of Load. Loads of jumbo bales shall be constructed so that the outermost bales at the sides of the load shall not be placed in the same direction in more than two successive tiers.

(c) Securement.

(1) V-boards are not required.

(2) Two longitudinal binders shall be used to secure the load, as follows:

(A) The ends of one binder shall be fastened to separate anchorages not less than 48 inches apart on the vehicle at the front of the load. The binder shall cross as it extends up the vertical end of the load and pass to the outside around the upper corners of the top bales, forming a loop on top of the load as shown in Figure 6.

(B) A second binder shall be similarly positioned over the rear of the load.

(C) The two binders shall be connected near the top center of the load by a winch or rachet-type tightening device.

(3) Crossbinders shall be of synthetic webbing not less than 2 inches in width.

(A) Crossbinders are not required for bales loaded crosswise to the vehicle.

(B) The first two and last two rows of bales on a vehicle do not require crossbinders. Each additional row of bales in the center of a load shall be secured by not less than one crossbinder.

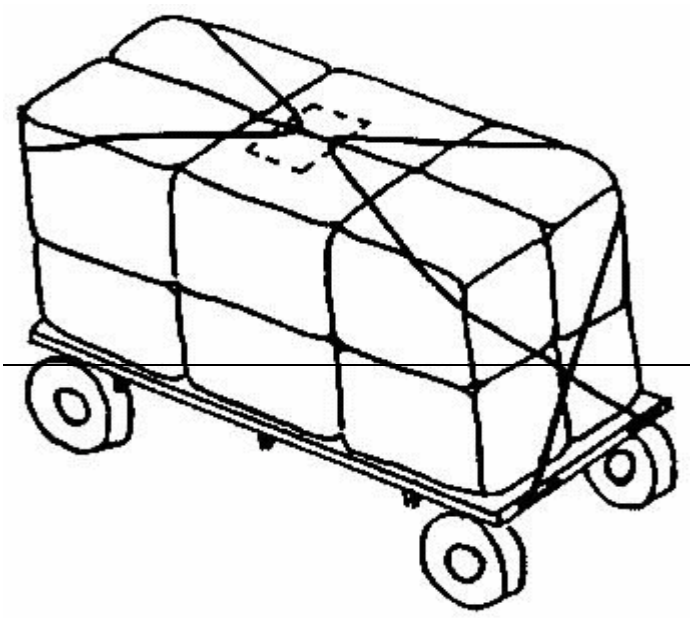


Figure 6. Placement of Longitudinal Binders on Jumbo Bales
Illustrative of Section 1314(c)

Note: Authority cited: Section 30800, Vehicle Code. Reference: Section 30800, Vehicle Code.

**1315**. Alternate Method of Compliance.

(a) Application for Alternate Method of Compliance. Application for any deviation from specific portions of these regulations shall be made in writing to the department. In considering the application, the department will determine whether the suggested alternate method carries out the original intent of the regulation.

(b) Approval of Alternate Method of Compliance. Such alternate method shall be used only after application has been made to and written approval has been issued by the department. A copy of the written statement granting departmental approval of the alternate method of compliance shall be carried in each vehicle or combination of vehicles operating under such authorization, and

shall be presented for inspection upon request by an authorized employee of the department, or any regularly employed and salaried police officer or deputy sheriff.

Note: Authority cited: Section 30800, Vehicle Code. Reference: Section 30800, Vehicle Code.

## ARTICLE 3. BALED COTTON, PAPER, AND JUTE SECUREMENT FOR TRANSPORTATION

**1320**. Scope of Regulations.

This article shall apply to the securement of all types and sizes of baled cotton, paper, and jute bagging transported on highways, except when loaded in vans or on vehicles equipped with racks on four sides.



Note: Authority cited: Section 2402, Vehicle Code. Reference: Section 31520, Vehicle Code.

**1321**. Definitions.

The following definitions shall apply for the purposes of this article.

(a) Tier. A tier is one layer of bales.

(b) Detachable Cargo Carrier. A detachable cargo carrier is a flatbed structure used with or without sides or bulkheads for the transportation of property and designed so as to be readily removable from the chassis of the transporting vehicle.

**1322**. General Provisions.

Binders used for the loading, securement, and transportation of baled cotton, paper, and jute shall meet the requirements of Sections 1300 through 1305 of this code and comply with the following additional requirements.

(a) Longitudinal Binders. Longitudinal binders shall have a breaking strength or load rating of not less than 9,000 pounds and shall be limited to the following types:

(1) Chain

(2) Wire rope

(3) Manila rope

(4) Synthetic fiber rope

(5) Synthetic webbing

(b) Perimeter Binders. Perimeter binders shall have a breaking strength or load rating of not less than 9,000 pounds and shall be limited to the following types:

(1) Chain

(2) Wire rope

(3) Manila rope

(4) Synthetic fiber rope

(c) Crossbinders. Crossbinders shall have a breaking strength or load rating of not less than 1,350 pounds and shall be limited to the following types:

~~(1) Chain~~

~~(2) Wire rope~~

~~(3) Manila rope~~

~~(4) Synthetic fiber rope~~

~~(5) Steel strapping~~

~~(6) Synthetic webbing~~

~~(d) V-Boards (V-Bars). When V-boards (V-bars) are used, they shall be positioned at the top edge of the load beneath the binders, and shall be in compliance with the following requirements:~~

~~(1) V-boards shall be not less than 3 ft nor more than 12 ft long, and shall be constructed of either one-piece, right-angled metal or plastic or of two parallel pieces of lumber, metal, or plastic attached at each end by flexible material. V-boards more than 6 ft long shall also be attached at the approximate midpoint.~~

~~(2) V-boards shall be long enough to restrain at least one-half of each bale to which they are applied. As far as practicable, multiple binders shall be uniformly spaced over the entire length of a V-board.~~

~~(3) Materials used in the construction of V-boards shall be of a strength not less than that of nominal size 1- by 6-in Douglas fir. Lumber V-boards shall be free of strength-impairing knots.~~

~~(e) Detachable Cargo Carriers. Manufacturers of detachable cargo carriers equipped with bulkheads on each end shall provide the department with certification that the bulkheads are capable of withstanding stress calculated as follows: When a force 0.2 times the weight of the maximum load is uniformly distributed over the entire bulkhead area, the yield strengths of the bulkhead materials shall be not less than the calculated stresses times a safety factor of five.~~

~~Note: Authority and reference cited: Section 31520, Vehicle Code.~~

~~**1323**. Securement.~~

~~Securement requirements shall be met before a vehicle enters a highway and shall be maintained en route by periodic inspection. If there is any evidence of load instability, the vehicle shall be driven from the roadway and shall not be moved again on the highway until corrective load securement adjustments are made.~~

~~Note: Authority and reference cited: Section 31520, Vehicle Code.~~

~~**1324**. Load Securement.~~

~~Loads of baled cotton, paper, and jute bagging shall be secured as follows.~~

~~(a) Horizontal Bales. Horizontal bales shall be secured by at least two parallel longitudinal binders over the top of the load, and by crossbinders as follows:~~

~~(1) Loads more than one tier high, with horizontal bales laid crosswise in the top tier shall have not less than four crossbinders uniformly spaced across the top of the load (Figure 1).~~

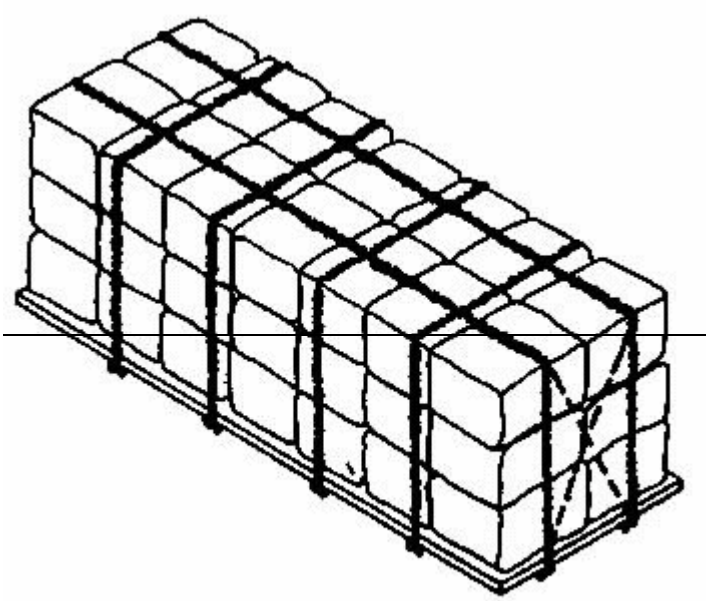


Figure 1. Illustrative of Section 1324(a)(1)

~~(2) Loads more than one tier high, with horizontal bales laid lengthwise in the top tier shall have one crossbinder placed near the midpoint of each such bale (Figure 2)~~

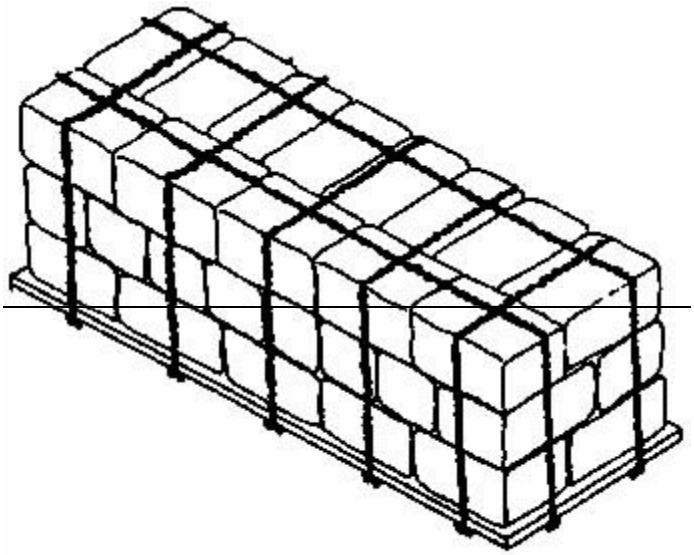


Figure 2. Illustrative of Section 1324(a)(2)

~~(b) Vertical Bales in One Tier. Loads of one tier of vertical bales (Figure 3) shall be secured to the vehicle with two perimeter binders as follows:~~

~~(1) One perimeter binder shall be attached near the front right corner of the vehicle bed, extended across the front of the load to a point not less than two-thirds of the height of the front left corner bale (measured from the vehicle bed), extended around the side at the same height to the rear left corner bale of the load, and fastened near the rear right corner of the vehicle bed, and~~

~~(2) The second perimeter binder shall be attached near the front left corner of the vehicle bed, extended across the front of the load to a point not less than two-thirds of the height of the right corner bale (measured from the vehicle bed), extended around the side at the same height to the rear right corner bale of the load, and fastened near the rear left corner of the vehicle bed.~~

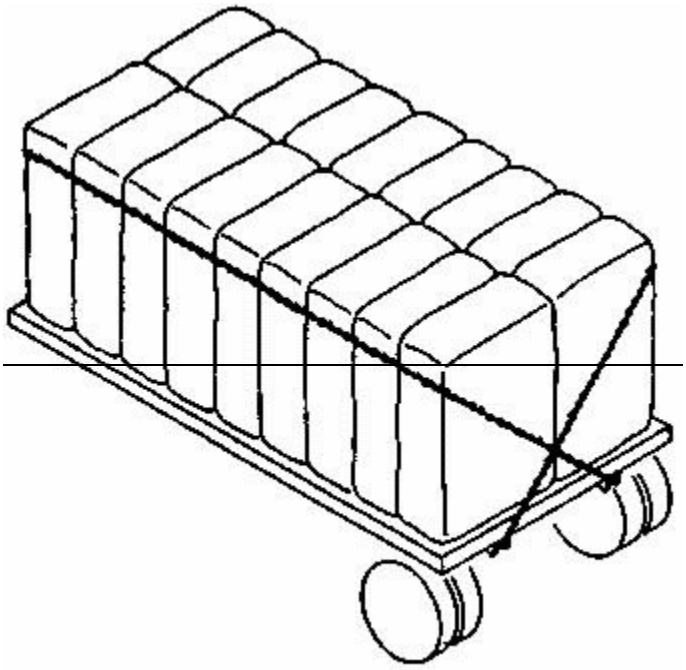


Figure 3. Illustrative of Section 1324(b)

~~(c) Vertical Bales in Bottom Tier. Multitiered loads with vertical bales in the bottom tier shall be secured to the vehicle as follows:~~

~~(1) Loads with vertical bales two across in the bottom tier and vertical bales in the second tier:~~

~~(A) Not less than two longitudinal binders shall extend in parallel lines over the top of the load and may be crossed or parallel at the ends, and not less than four crossbinders shall be uniformly spaced over V-boards (Figure 4); or~~

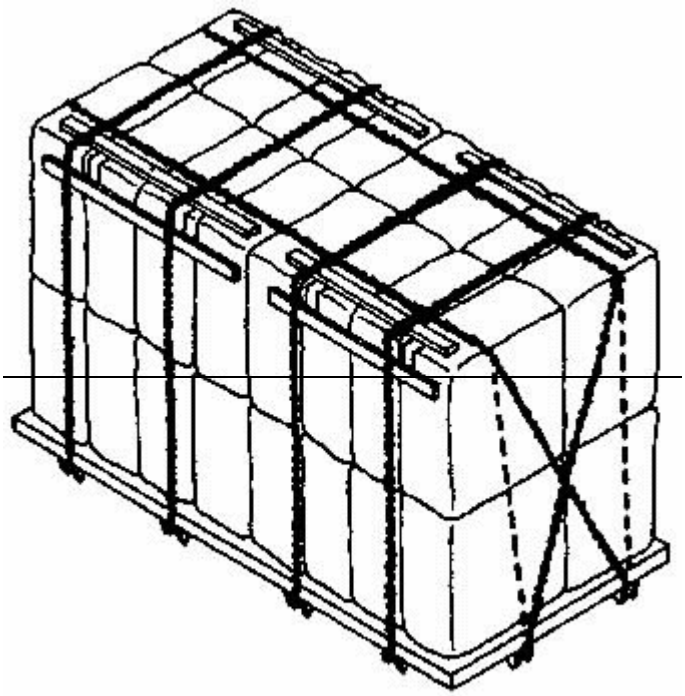


Figure 4. Illustrative of Section 1324(c)(1)(A)

~~(B) Two perimeter binders shall be applied to the top tier as prescribed in subsections 1324(b)(1) and (2), and not less than four crossbinders shall be uniformly spaced across the top of the load (Figure 5).~~

~~(2) Multitiered loads with vertical and horizontal bales in the bottom tier and vertical bales in the top tier shall be secured with two perimeter binders as prescribed in Section 1324(b)(1) and (2) applied to the top tier and not less than four crossbinders uniformly spaced across the top of the load (Figure 5).~~

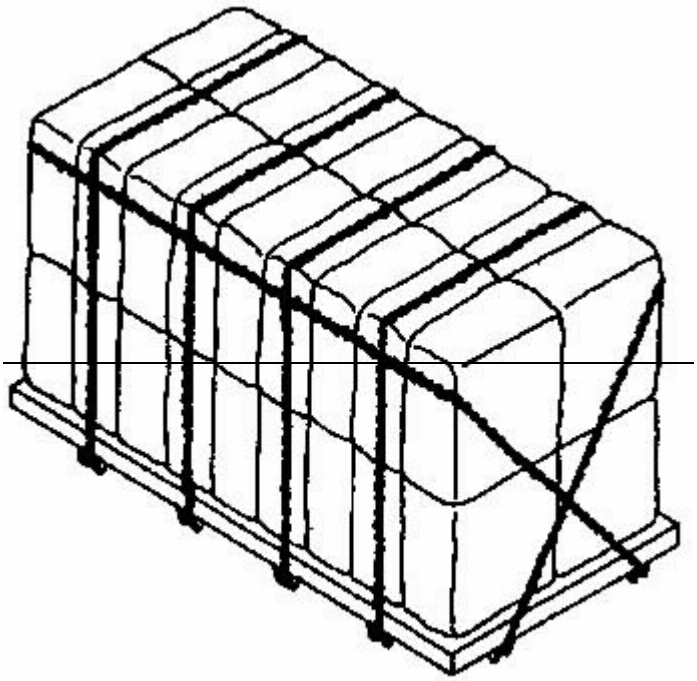


Figure 5. Illustrative of Section 1324(c)(1)(B)

~~(3) Loads with vertical bales two across in the bottom tier and horizontal bales in the tier(s) above: Not less than two longitudinal binders shall extend in parallel lines and may be crossed or parallel at the ends, and not less than four crossbinders shall be uniformly spaced over the length of the load (Figure 6).~~

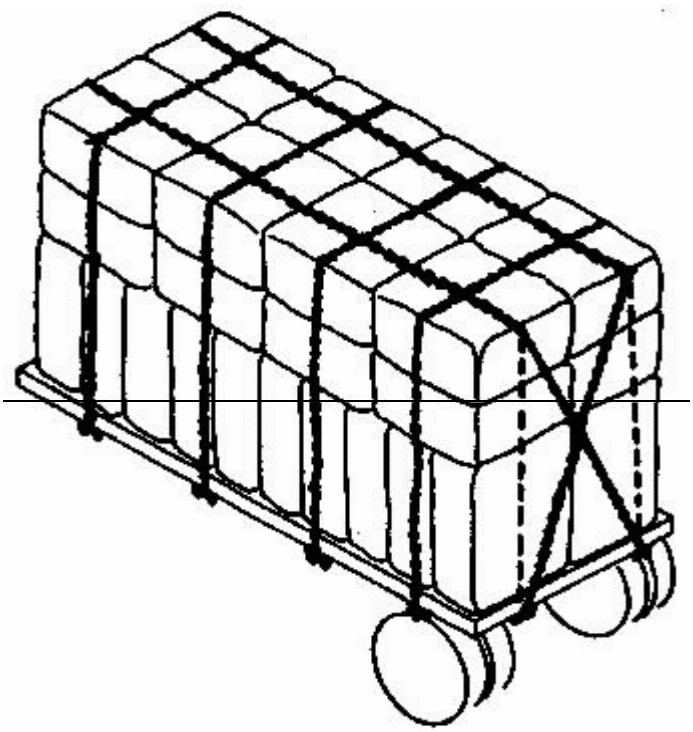


Figure 6. Illustrative of Section 1324(c)(3)

(4) Loads with vertical bales three or more across in the bottom tier and horizontal bales in the second tier (Figure 7):

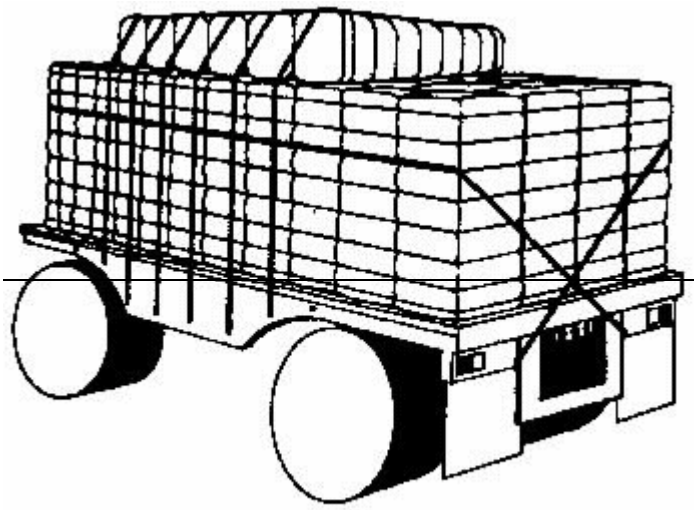


Figure 7. Illustrative of Section 1324(c)(4)

(A) One perimeter binder shall be attached near the front right corner of the vehicle bed, extended across the front of the load to a point not less than two-thirds of the height of the front lower left corner bale (measured from the vehicle bed), extended around the side at the same height to the rear lower left corner bale, and fastened near the rear right corner of the vehicle bed; and

(B) Another perimeter binder shall be attached near the front left corner of the vehicle bed, extended across the front of the load to a point not less than two-thirds of the height of the front lower right corner bale (measured from the vehicle bed), extended around the side at the same height to the rear lower right corner bale, and fastened near the rear left corner of the vehicle bed; and

(C) Not less than one crossbinder shall be uniformly placed near the midpoint of each bale stacked horizontally in the second tier. As an alternative, crossbinders may be placed over V-boards as specified in Section 1322(d) of this title. When V-boards are used, not less than two crossbinders shall be placed over each V-board.

(d) Detachable Cargo Carrier Load. Longitudinal or perimeter binders are not required to secure loads to detachable cargo carriers equipped with bulkheads certified as prescribed in subsection 1322(e). Crossbinders shall be attached either to the container or to the vehicle bed and shall extend over the approximate midpoint of each bale in a row of bales (Figure 8).

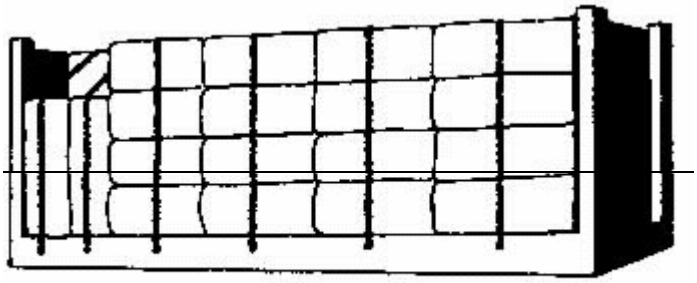


Figure 8. Illustrative of Section 1324(d)

Note: Authority and reference cited: Section 31520, Vehicle Code.

**1325**. Alternate Method of Compliance.

Application for any deviation from specific portions of these regulations shall be made in such form as may be prescribed by the department. In considering the application, the department will determine whether the suggested alternate method carries out the original intent of the regulation. Such alternate method shall be used only after application has been made to and written approval has been issued by the department. A copy of the written statement granting departmental

approval of the alternate method of compliance shall be carried in each vehicle or combination of vehicles operated under such authorization, and shall be presented for inspection upon request by an authorized employee of the department, or any regularly employed and salaried police officer or deputy sheriff.

Note: Authority and reference cited: Section 31520, Vehicle Code.

## ARTICLE 4. LOGS AND POLES–LOADING, SECUREMENT, AND TRANSPORTATION

**1330**. Scope of Regulations.

This article shall apply to the loading, securement, and highway transportation of logs or poles, including wood piling and utility poles, except as specifically exempted by Section 29201 of the Vehicle Code.

Note: Authority and reference cited: Section 29200, Vehicle Code. Reference: Section 29200, Vehicle Code.

**1331**. Definitions.

The following definitions shall apply wherever the terms are used in this article.

(a) Short Log or Pole. A "short log or pole" is one of less length than the distance between the front and rear stakes or chock blocks retaining the load.

(b) Load-Encircling Binder. A "load-encircling binder" is a binder applied around a load of logs or poles without attachment to the vehicle.

(c) Gut Wrapper. A "gut wrapper" is an intermediate binder which extends around the bottom portion of a load to prevent it from spreading.

Note: Authority and reference cited: Section 29200, Vehicle Code.

**1332**. General Provisions.

The following general provisions shall apply to the transportation of logs or poles.

~~(a) Transportation. No person shall transport any logs or poles in a manner other than as provided in this article without first obtaining authorization from the department as provided in Section 1339.~~

~~(b) Binder Requirements. Binders used for the loading, securement, and transportation of logs and poles shall meet the requirements of Sections 1300 through 1305 of this code, have breaking strength or load rating of not less than 11,500 pounds, and be limited to the following types:~~

~~(1) Chain~~

~~(2) Wire rope~~

~~(3) Synthetic webbing - only on loads of finished or treated poles.~~

~~(c) Stability and Security of Loads. All logs or poles shall be well balanced and centered on the vehicle so that the load is stable without binders. Prior to a vehicle entering a highway, all binders shall be tightened and locked, and all loading and securement requirements shall be met and maintained en route by periodic inspection of the load. If evidence of load instability occurs, or if any part of the load projects beyond the legal width limits of the vehicle, the vehicle shall be driven from the roadway as soon as practicable and shall not be moved upon the highway again until adjustments are made to bring the load into conformance with this article.~~

~~(d) Bunks. Bunks shall be cleaned of any accumulation of debris that might interfere with proper operation of bunks, bunk stakes, or chock blocks. To minimize longitudinal shifting, top edges of bunks shall not be more than 3/8 - in. thick and shall be squared or beveled to a sharp edge. Bunks shall not be bent down more than 1 in. at either end. Bunks for finished or treated poles may be capped with 4- by 4-in. or larger rough-cut timbers securely fastened to the bunk. When bunks are designed to pivot freely, they shall be properly maintained and lubricated.~~

~~(e) Chock Blocks. Chock blocks shall extend to not less than 8 inches above the top edge of the bunk, except that for a single log, chock blocks may be turned in provided they extend at least 5 1/2 inches above the top of the bunk.~~

~~(1) Chock blocks shall be of steel or other material of equivalent bending and compression strength.~~

~~(2) Chock blocks shall not extend beyond the end of the bunk.~~

~~(3) The strength of chock block chains shall be not less than that of 1/2 - inch high-test steel chain.~~

~~(f) Stakes. Wooden stakes used to restrain logs or poles shall be straight-grained, at least equal to Douglas fir in strength, and free from strength- impairing knots. Stakes of material other than wood shall be at least equal in strength to the wooden stakes prescribed. The minimum dimensions of wooden stakes shall be as follows:~~

~~(1) 2 x 4 inches for nonpyramid loads less than 5 feet in height above the vehicle bed~~

~~(2) 4 x 4 inches for nonpyramid loads 5 feet or more in height above the vehicle bed~~

~~(3) 4 x 4 inches for all pyramid loads.~~

~~(g) Stake Pockets. When stake pockets are used, they shall be designed to fit the stakes and shall be at least equal in strength to the stake strength.~~

~~(h) Short Log Converter Unit. A device consisting of parallel metal rails connected by not less than 2 crossmembers and 2 rigidly mounted bunk stake assemblies may be used in conjunction with a motor truck and logging dolly to permit a load of logs to be carried in 2 groups. The converter unit shall be strong enough to prevent distortion when loaded and shall be secured to the transporting vehicles by interlocking with existing bunk stake assemblies at an angle of approximately 90 degrees. The converter unit shall be secured to the existing bunks on the motor~~

~~vehicle and dolly with wire rope or chain at a point within 46 cm (18 in.) of the end of each bunk.~~

~~(i) Cab Protection. Cab protection shall be provided on all motor vehicles and combinations transporting logs or poles. Cab guards shall extend the full height and width of the driver's compartment and shall be designed to prevent penetration by any part of the load, except that when the load consists entirely of unprocessed logs loaded in accordance with these regulations, the cab guard need not be designed to prevent penetration by logs less than 64 cm (25 in.) in diameter.~~

~~(1) Materials. Materials used in the construction of cab guards required by this section shall meet the following requirements:~~

~~(A) Vertical posts shall be constructed of steel or iron at least equivalent in strength to structural channel steel of 10.2 cm (4 in.) section depth and . 48 cm ( 3/16 - in.) web thickness, weighing not less than 2.27 Kg (5 lb) per linear ft.~~

~~(B) Horizontal members shall be constructed of steel or iron at least equivalent in strength to nominal size 3.8 cm (1.5 in.) steel pipe having 4.8 cm (1.9 in.) outside diameter and .37 cm (.145 in.) wall thickness, weighing not less than 1.13 Kg (2.5 lb) per linear ft.~~

~~(C) Material used to cover cab guards, when the horizontal members are not sufficient or not adequately spaced to prevent penetration by any part of the load, shall be of steel or wood at least equivalent in strength to 1.9 cm ( 3/4 - in.) exterior grade plywood.~~

~~(D) Aluminum may be used in the construction of cab guards provided the weight per linear foot is at least 50 percent of that specified for steel and the web thickness is at least twice that specified for steel, or the manufacturer certifies that the product is of a strength at least equivalent to that specified for steel.~~

(2) Cab Guards on Motor Vehicles. Cab guards on motor vehicles shall be constructed of not less than 2 vertical posts and 3 horizontal members equally spaced and joined vertically. Cab guards shall be securely anchored to the frame or deck of the vehicle and braced to resist displacement. Materials used to anchor or brace the guard shall be of a strength at least equivalent to that specified for vertical posts.

(3) Cab Guards on Combinations. When the configuration of a combination precludes installation on the motor vehicle, the cab guard may be secured to the front of a semitrailer, provided it is constructed of 4 vertical posts with a combined strength at least equivalent to 2 vertical posts prescribed in preceding subsection (i)(1)(A), the posts are evenly spaced, securely fitted in steel pockets, and joined laterally from top to bottom by material meeting the requirements of preceding subsection (i)(1)(C). To resist displacement in the event of load shifting, the cab guard shall be restrained longitudinally by chain or wire rope with a breaking strength of not less than 5,216 Kg (11,500 lb) attached at or near the top of the outside stake at each side of the guard and to an anchorage on each side of the vehicle.

(4) Cab Protection -Loads of Logs or Poles Less Than 64 cm (25 In.) in Diameter. Logs or poles less than 64 cm (25 in.) in diameter at the butt end may be transported by vehicles or combinations which are provided cab protection as prescribed in Section 1415 of this title.

Note: Authority and reference cited: Section 29200, Vehicle Code.

**1333**. Pyramid Loading of Logs or Poles on Flatbed or Rail-Equipped Vehicles.

Except as permitted in Section 1334 of this code, logs or poles on flatbed vehicles or vehicles equipped with rails shall be loaded in pyramid fashion and shall be solidly packed with the outer

bottom logs resting solidly against stakes. At least 3 pairs of stakes in stake pockets shall be used for logs or poles less than 20 feet in length; at least 4 pairs for lengths 20 feet or more. Each stake shall extend at least as high as the center of the bottom layer log or pole directly adjacent to the stakes. (Figure 1, 3, and 4)

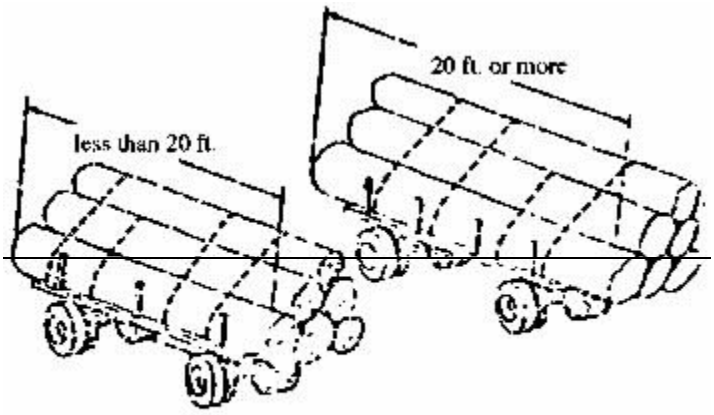



Fig. 1. Illustrative of Sections 1333, 1335(b) and (e)

Note: Authority and reference cited: Section 29200, Vehicle Code.

**1334**. Nonpyramid Loading of Small Logs and Poles on Flatbed or Rail-Equipped Vehicles. Logs or poles less than 25 inches in diameter at the butt end may be loaded in nonpyramid fashion on flatbed vehicles or vehicles equipped with rails. At least 3 pairs of stakes in stake pockets shall be used for logs or poles less than 20 feet in length; at least 4 pairs fr lengths 20 feet or more. The height of the load shall not exceed the height of the stakes and the load shall fully occupy the lateral area between opposite stakes. (Figures 2 and 5)

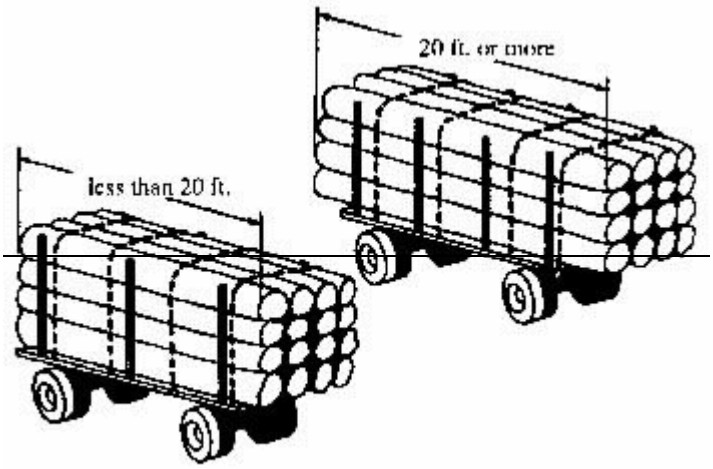


Fig. 2. Illustrative of Sections 1334 and 1335(b)

~~Note: Authority and reference cited: Section 29200, Vehicle Code.~~

**~~1335~~**~~. Binding of Logs or Poles on Flatbed or Rail-Equipped Vehicles.~~

~~Loads of logs or poles on flatbed vehicles or vehicles equipped with rails shall be secured with binders as follows.~~

~~(a) Single Log in Height. A single log or pole or a load that is one log or pole in height shall be secured by two binders, one securely anchored to each side of the vehicle near the front and one securely anchored to each side of the vehicle near the rear. (Figure 3)~~

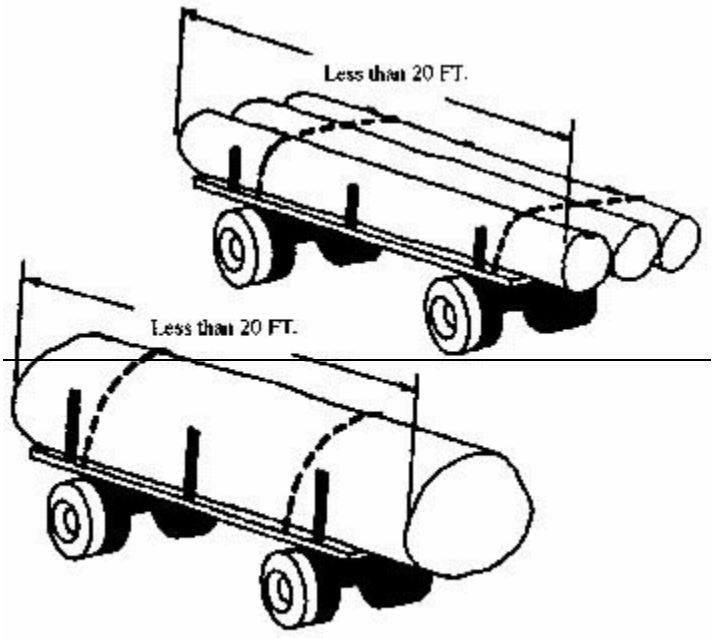



Fig. 3. Illustrative of Sections 1333 and 1335(a)

~~(b) More Than One Log in Height. Loads two or more logs or poles in height shall have four binders, as evenly spaced as practicable, secured to each side of the vehicle. (Figures 1, 2, and 4)~~

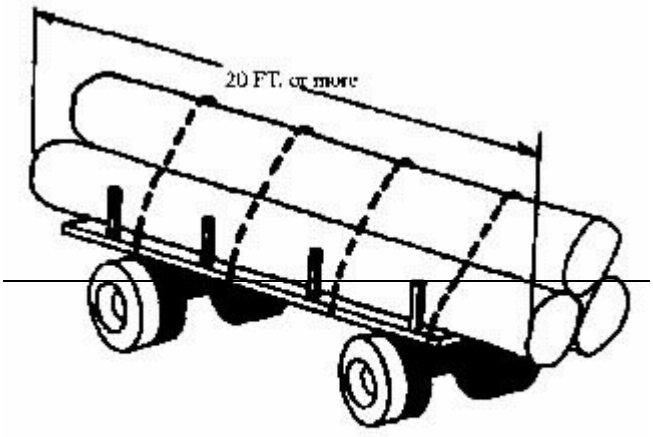



Fig. 4. Illustrative of Sections 1333 and 1335 (b)

(c) Over Six Logs in Height. Loads over six logs or poles in height shall have six binders, as evenly spaced as practicable, secured to each side of the vehicle. (Figure 5)

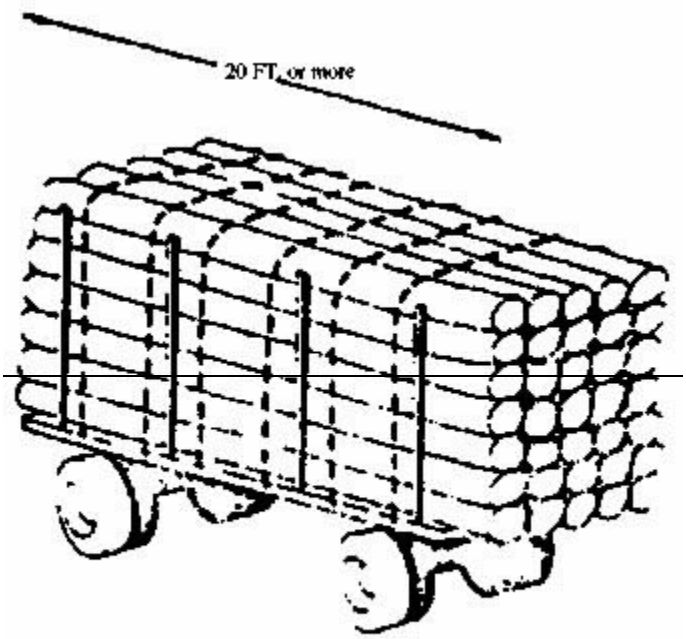



Fig. 5. Illustrative of Sections 1334 and 1335(c)

(d) Short Logs. Each short log or pole on top of a load shall be secured by two binders.

(e) Gut Wrappers in Pyramid Loads. Pyramid loads three or more logs or poles in height shall have one of the required binders applied as a gut wrapper. (Figure 1) Such loads six or more logs or poles in height shall have at least one but not more than two of the required binders applied as gut wrappers. Gut wrappers are not required on loads of finished or treated poles.

Note: Authority and reference cited: Section 29200, Vehicle Code.

**1336**. Loading of Logs or Poles on Vehicles with Bunks.

Logs or poles shall be loaded on vehicles with bunks in pyramid fashion (unless otherwise provided), shall be solidly packed with the weight centered over the bunks, and shall have the outer bottom logs or poles resting solidly against chock blocks or bunk stakes. Each log in direct contact with the bunk shall project at least 6 inches beyond the bunk.

Note: Authority and reference cited: Section 29200, Vehicle Code.

**1337**. Binding of Logs or Poles on Vehicles with Chock Blocks.

Logs or poles on vehicles equipped with chock blocks shall be secured as follows.

(a) Single Log. A single log shall be secured by at least one binder attached to or passing through an anchorage at or near each end of the rear bunk. (Figure 6)

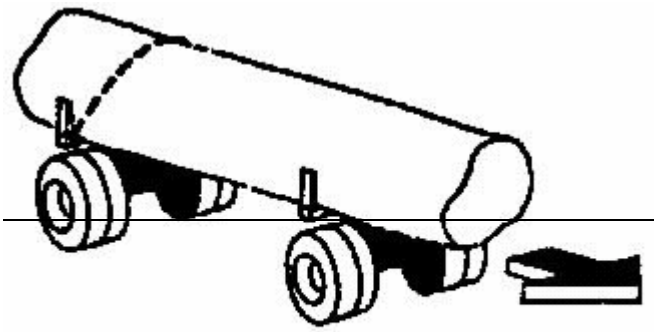


Fig. 6. Illustrative of Section 1337(a)

(b) One Log in Height. Loads of more than a single log but not more than one log or pole in height shall be secured by at least two binders, one at the front and one at the rear. The rear

~~binder shall be attached to or pass through an anchorage at or near each end of the rear bunk. (Figure 7)~~

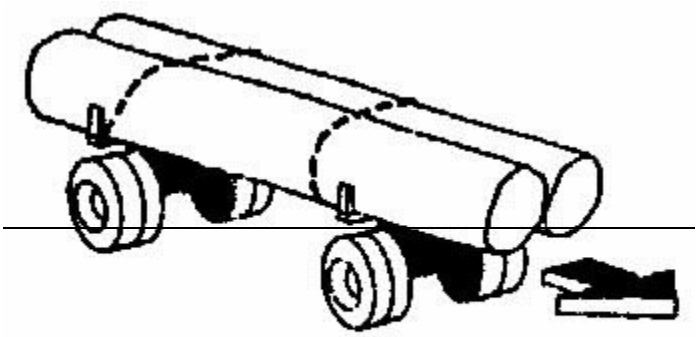


Figure 7. Illustrative of Section 1337 (b)

~~(c) Two Logs in Height. Loads two logs or poles in height shall be secured by at least three binders spaced as evenly as practicable. The rear binder shall be attached to or pass through an anchorage at or near each end of the rear bunk. (Figure 8)~~

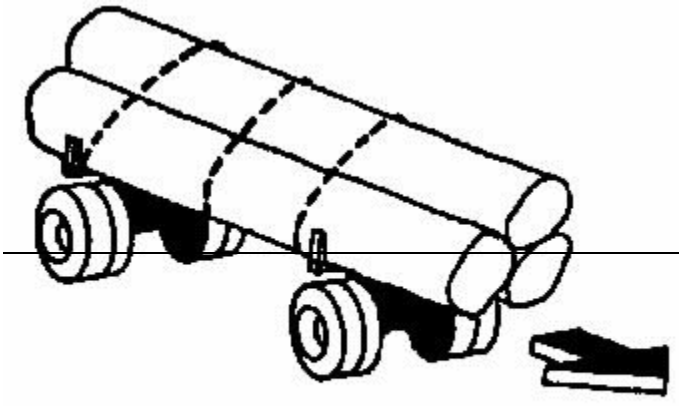


Fig. 8. Illustrative of Section 1337(c)

~~(d) Three or More Logs in Height. Loads three or more logs or poles in height shall be secured by at least four binders spaced as evenly as practicable. One binder shall be attached to or pass through an anchorage at or near each end of the rear bunk. (Figure 9)~~

~~Fig. 9. Illustrative of Sections 1337(d) and (g)~~

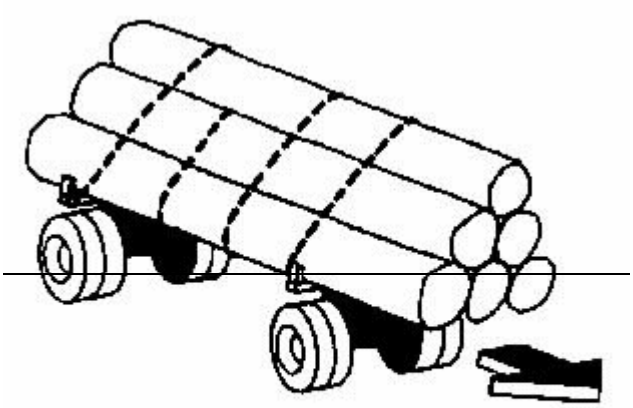


Figure 9. Illustrative of Sections 1337 (d) and (g)

~~(e) Over Six Logs in Height. Loads over six logs or poles in height shall have at least six binders spaced as evenly as practicable. One binder shall be attached to or pass through an anchorage at or near each end of the rear bunk. (Figure 10)~~

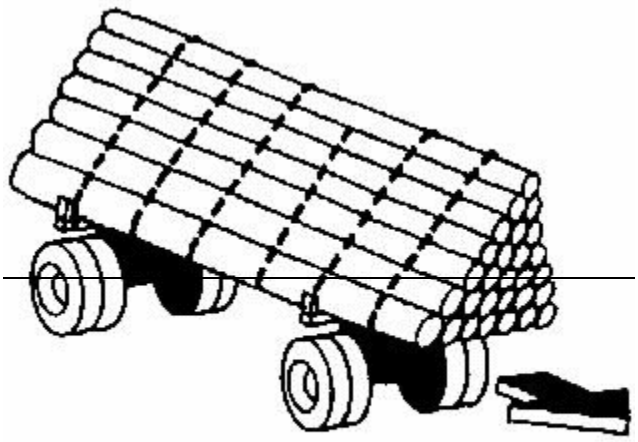


Fig. 10. Illustrative of Sections 1337(e) and (g) (Gut wrapper not required on finished or treated poles)

~~(f) Short Logs. Each short log or pole on top of a load shall be secured by at least two binders.~~

~~(g) Gut Wrappers. Loads three or more logs or poles in height shall have one of the required binders applied as a gut wrapper. Loads six or more logs or poles in height shall have at least one but not more than two of the required binders applied as gut wrappers. Gut wrappers are not required on loads of finished or treated poles. (Figures 9 and 10)~~

~~Note: Authority and reference cited: Section 29200, Vehicle Code.~~

~~**1338**. Loading and Binding of Logs or Poles on Vehicles with Bunk Stake Assemblies.~~

~~(a) General Requirements. Bunk stake assemblies and loads shall meet the following general requirements:~~

~~(1) Bunk stake assemblies shall meet the requirements in Sections 1339.1 through 1339.6 of this title.~~

~~(2) When chock blocks are used in conjunction with bunk stake assemblies, loads shall be secured in accordance with preceding Section 1337.~~

~~(3) If the upper half or more of any log or pole (diameter at the large end) extends above the bunk stakes, such logs or poles shall be loaded in pyramid fashion with the major portion of each properly saddled.~~

~~(4) When bunk stake assemblies are mounted on flatbed vehicles, the binders required by this section to secure the load may be anchored to each side of the transporting vehicle.~~

~~(b) Binding. Loads of logs or poles on vehicles equipped with bunk stakes shall be secured as follows:~~

~~(1) A single log shall be secured by at least one binder which shall be attached to or pass through an anchorage at or near each end of the rear bunk. (Figure 11)~~

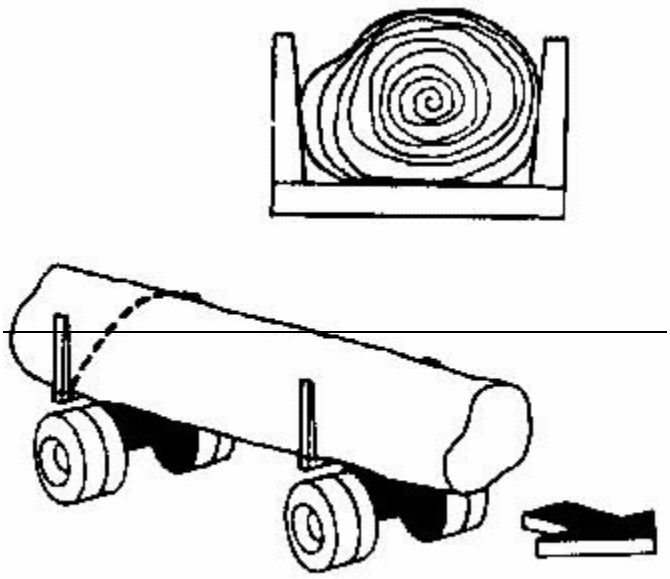


Fig. 11. Illustrative of Section 1338(b)(1)

(2) Loads of one log or pole in height and loads with less than the upper half of any log or pole extending above the top of the bunk stakes shall be secured by one binder attached to or passing through an anchorage at or near each end of the rear bunk, and at least one load-encircling binder positioned at or near the forward bunk. (Figure 12)

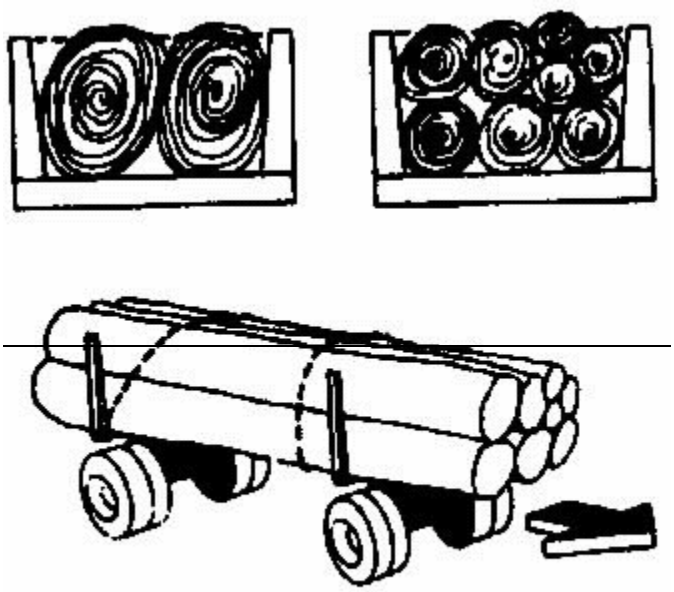


Fig. 12. Illustrative of Section 1338(b)(2)

(3) Loads with the upper half or more of any log or pole extending above the top of the bunk stakes shall be secured by one binder attached to or passing through an anchorage at or near each end of the rear bunk, and two load-encircling binders spaced as evenly as practicable between the front and rear bunks. (Figure 13)

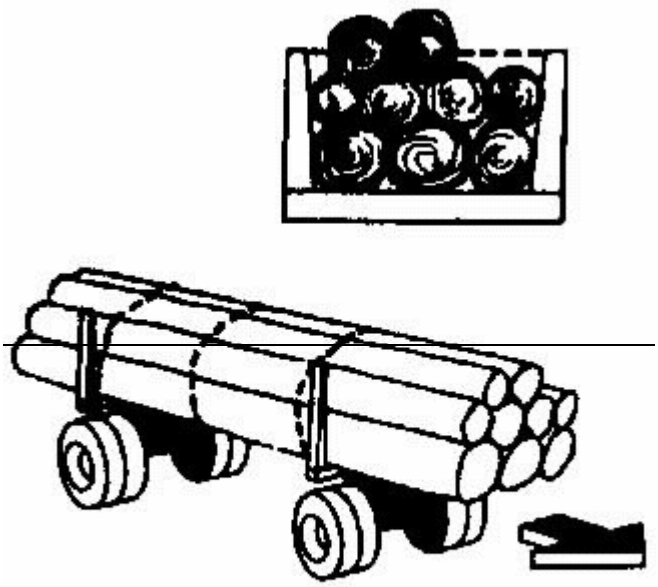


Fig. 13. Illustrative of Section 1338(b)(3)

~~(4) Loads with three or more logs or poles positioned completely above the top of the stakes shall be secured by one binder attached to or passing through an anchorage at or near each end of the rear bunk, and three load-encircling binders spaced as evenly as practicable between the front and rear bunks. One of the required load-encircling binders may be applied as a gut wrapper. (Figure 14)~~

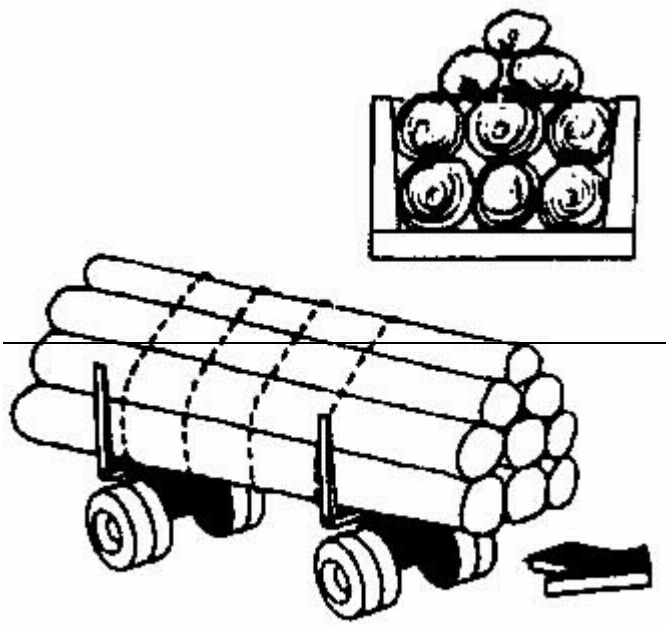


Fig. 14. Illustrative of Section 1338(b)(4)

~~(5) A combination of vehicles consisting of a motor truck and trailer or a motor truck and logging dolly transporting logs or poles shall comply with the binder requirements contained in this section except that not more than 3 binders shall be required on each vehicle, or each longitudinally separated load on a short log converter unit, unless the following subsection (6) applies.~~

~~(6) Any vehicle equipped with four or more bunk stake assemblies transporting a load of logs or poles comprised of two groups with a longitudinal separation in the load above the stakes shall have one each of the required binders attached to or passing through an anchorage at or near each end of the second and rearmost bunks. All logs or poles shall be secured by at least two binders.~~

~~(7) Each short log or pole on top of a load shall be secured by at least one binder and one load-encircling binder; or two load-encircling binders.~~

~~Note: Authority cited: Section 29200, Vehicle Code. Reference: Section 29200, Vehicle Code.~~

**1339**. Alternate Method of Compliance.

Application for any deviation from specific portions of these regulations shall be made in such form as may be prescribed by the department. In considering the application, the department will determine whether the suggested alternate method carries out the original intent of the regulation. Such alternate method shall be used only after application has been made to and written approval has been issued by the department. A copy of the written statement granting departmental approval of the alternate method of compliance shall be carried in each vehicle or combination of vehicles operating under such authorization and shall be presented for inspection immediately upon request by an authorized employee of the department, or any regularly employed and salaried police officer or deputy sheriff.

Note: Authority and reference cited: Section 29200, Vehicle Code.

## ARTICLE 4.5. BUNK STAKE ASSEMBLIES

**1339.1**. Definition.

A "bunk stake assembly" is an aluminum or steel fixture consisting of a bunk or bolster with a vertical stake at each end, either hinged or rigidly attached, and designed to be mounted on a vehicle to support and restrain loads of logs or poles during transit.

Note: Authority and reference cited: Sections 26103 and 29200, Vehicle Code.

**1339.2**. Identification Markings.

The front or rear surface of each stake and each bunk shall be permanently and legibly marked with the manufacturer's name, lettered trademark, or initial, and the model designation in letters and numerals at least 13 mm (0.50 in.) in height. Required markings shall be cast, stamped, or welded, and shall be visible when the vehicle is loaded.

Note: Authority and reference cited: Sections 26103 and 29200, Vehicle Code.

**1339.3**. General Requirements.

(a) Design. Bunk stake assemblies shall be designed, constructed, and tested as a complete unit with the stakes on both ends being of identical model and design.

(b) Release Mechanism. The mechanism for releasing trip-type or hinged stakes shall be designed to prevent unintentional release when loaded or unloaded and to be released from the opposite end of the bunk without hazard to the operator.

(c) Maintenance. Bunk stake assemblies shall be maintained in good working order and shall operate freely without binding. Replacement parts shall be at least equal in quality to the original equipment.

(d) Modifications. Modifications shall not be made in the construction or materials of a bunk stake assembly unless prior written authorization is obtained from the bunk stake manufacturer.

(e) Repairs. Any bunk stake or component manufactured from material requiring controlled heat treatment shall not be subjected to welding or cutting heat unless prior written approval is obtained from the bunk stake manufacturer. Any major repairs other than the replacement of parts with original factory parts shall require like authorization.

Note: Authority and reference cited: Sections 26103 and 29200, Vehicle Code.

**1339.4**. Test Requirements for Bunk Stakes for Large Logs.

Bunk stake assemblies for logs and poles 64 cm (25 in.) or more in diameter at the butt end, including any mechanism for locking trip-type stakes in the hauling position, shall withstand an outward force determined by the height of the stakes above the bunk.

(a) Test Load for Normal Stakes. Where the test load can be applied 76 mm (3 in.) from the top of the stake, the bunk stake assembly shall withstand a force determined by the following formula:

F = 1,600,000 / 60 + H

where

F = Test load (lb) to be applied 3 in. below top of stake

H = Height (in.) from top of bunk to point 3 in. below top of stake

(b) Test Load for Special Stakes. Where the test load cannot be applied 76 mm (3 in.) from the top of the stake, the bunk stake assembly shall withstand a force determined by the following formula:

F 1 = L c x F / L t

where

F t = Test load (lb) applied to stake

L c = Lever arm length (in.) from pivot point to a point 3 in. below top of stake

L t = Lever arm length (in.) from pivot point to point of load application

F = Calculated load (lb) determined under subsection (a)

Note: Authority and reference cited: Section 26103, Vehicle Code.

**1339.5**. Test Requirements for Bunk Stakes for Small Logs.

Bunk stake assemblies for logs and poles less than 64 cm (25 in.) in diameter at the butt end shall be designed and constructed to withstand a force applied outward at a point within 76 mm (3 in.) of the top of the stake, as determined by the following formula:

F = 240,000 / H

where

F = Test load (lb) applied 3 in. below top of stake

H = Height (in.) from top of bunk to point of load application

Note: Authority and reference cited: Section 26103, Vehicle Code.

**1339.6**. Bunk Stake Width.

The overall width of the bunk and stakes shall not exceed 259 cm (102 in.) when the full test load is applied. The difference in overall width at the top of the stakes between the unloaded position and the fully loaded position shall not exceed one-sixth of the distance from the top of the stake to the top of the bunk. The stakes shall be preloaded once, released, and any cable adjustments or other normal adjustment made before ap plying the full load and measuring the width. Bunk stakes for poles less than 64 cm (25 in.) in diameter may meet this test with a binder connecting the top of the stakes as provided in Section 1338(c) of this title.

Note: Authority and reference cited: Section 26103, Vehicle Code.

## ARTICLE 5. JUNK AND SCRAP METAL - LOADING, SECUREMENT, AND TRANSPORTATION

**1340**. Scope of Regulations.

The following regulations shall apply to the transportation of junk and scrap metal of all types and grades, including vehicle bodies.

| *Subject* | *Section* |
|---|---|
| Scope of Regulations | 1340 |
| Definitions and General Provisions | 1341 |
| Junk and Scrap Metal (Including Baled Vehicle Bodies) Loading and Securement. | 1342 |
| Unbaled Vehicle Body Loading and Securement | 1343 |
| Alternate Method of Compliance | 1344 |

Note: Authority and reference cited: Section 31510, Vehicle Code.

**1341**. Definitions and General Provisions.

The following definitions and general provisions shall apply to the transportation of junk and scrap metal.

(a) Rackbinder. A "rackbinder" is a binder used to prevent side racks from spreading.

(b) Binder Requirements. Binders used for the loading, securement, and transportation of junk and scrap metal shall meet the specifications of Sections 1300 through 1305 of this code.

~~(1) Crossbinders. Crossbinders shall be of chain or wire rope and shall have a breaking strength of not less than 9,800 pounds.~~

~~(2) Rackbinders. Rackbinders shall have a breaking strength of not less than 2,650 pounds.~~

~~(c) Racks. Racks used to secure loads of scrap and junk metal shall meet the following requirements:~~

~~(1) Racks shall be retained by vertical members resting in stake pockets and shall be of a strength sufficient to contain the load.~~

~~(2) Vertical members of racks shall fit and conform to the contours of stake pockets.~~

~~(3) Wooden vertical members of racks shall be straight grained without strength-impairing defects and shall be not less than 1 3/4 inches thick and 2 7/8 inches wide.~~

~~(4) Racks shall not contain any holes or gaps larger than the smallest piece of scrap being transported.~~

~~(5) A bulkhead may be substituted for front end racks.~~

~~(6) Each rack shall be secured to any adjacent rack or bulkhead by steel strap material or a locking device applied near the top corners.~~

~~(d) Rack Binding. Rackbinders or crossbinders shall be applied to loads which are 3 or more feet in height and retained by racks, and such binders shall be, as far as is practicable, equally spaced the length of the load. The number of binders shall be not less than the number of 6-foot lengths in the load, and no load shall have less than three such binders.~~

~~(1) Rackbinders shall extend above the major portion of the load and shall be attached to vertical members of opposite side racks.~~

~~(2) Crossbinders applied outside the racks may be substituted for rackbinders, provided they are of the required number and spacing.~~

(3) Rackbinders are not required on vehicles with solid sides joined to the deck surface and constructed with sufficient strength to contain the load without expanding or otherwise becoming distorted.

(e) Condition of Equipment. All equipment used to secure and contain loads of junk and scrap metal, including vehicle bodies, shall be maintained in good condition. Vehicle beds shall not contain any hole or gap larger than the smallest piece in the transported load.

(f) Extension of Load Over Cab. Structures which support loads over the driver's compartment shall be of steel construction, capable of supporting the load carried without structural failure or distortion, and no part of the load or cab shall obstruct the view of the driver to the front or sides of the transporting vehicle. The bed of such a structure and the load transported on it shall be in compliance with any applicable requirements of these regulations.

(g) Stability of Load. Junk and scrap metal shall be solidly loaded and tightly secured so as to prevent rocking, tipping, or shifting. All loading and securement requirements shall be met prior to the vehicle entering a highway and shall be so maintained en route by periodic inspection of the load. If there is any evidence of load instability, the vehicle shall be driven from the roadway and shall not again be moved on the highway until corrective load or securement adjustments are made to conform to these regulations.

Note: Authority and reference cited: Section 31510, Vehicle Code.

**1342**. Junk and Scrap Metal (Including Baled Vehicle Bodies) Loading and Securement.

The following provisions shall govern the transportation of loose, bulky, baled, or combination loads of junk and scrap metal, including baled vehicle bodies.

(a) Miscellaneous Loose Loads. Except as otherwise provided, miscellaneous loose junk and scrap metal shall be contained by the four sides of the transporting vehicle or by racks with each metal piece centered below the rack tops. Racks which enclose machine shop turnings or similar material shall be without gaps or openings, and such loads shall be covered en route to prevent spillage.

(b) Bulky and Fabricated Loads. Loads composed solely of machinery, metal tanks, implements, structural members, or similar items of a bulky, elongated, or fabricated nature need not be contained by racks, provided crossbinders effectively secure the load on the vehicle.

(c) Baled Loads. Loads composed solely of baled junk and scrap metal, including baled vehicle bodies, shall be solidly packed to prevent shifting. In loads of more than one tier, each row of bales shall have crossbinders which effectively secure the load on the vehicle. A single tier of bales may be contained by racks.

(d) Combination Loads. Loads consisting of loose scrap combined with bulky, integral, or fabricated items need not be contained by racks when such items provide security equivalent to that of racks or of crossbinder securement as prescribed in preceding subsection (b).

Note: Authority and reference cited: Section 31510, Vehicle Code.

**1343**. Unbaled Vehicle Body Loading and Securement.

The transportation of unbaled vehicle bodies shall be subject to the following provisions.

(a) General Requirements. General requirements applicable to the loading and securement of unbaled vehicle bodies are as follows:

~~(1) Subject to preceding Section 1341(g) and Vehicle Code Sections 35406 and 35410, when the longitudinal axis of the load and the transporting vehicle are parallel, a vehicle body may extend by not more than one-third its length beyond the rear end of the transporting vehicle bed surface. No part of any vehicle body loaded at an angle shall extend beyond the bed of the transporting vehicle.~~

~~(2) When practicable, at least one binder shall pass through each vehicle body required to be secured by crossbinders.~~

~~(3) Vehicle body doors which could swing open beyond the sides of the transporting vehicle shall be secured closed en route.~~

~~(b) Flattened Vehicle Bodies. Vehicle bodies flattened full length and loaded in a stack of multiple bodies shall be secured by at least two crossbinders applied over the top of the stack.~~

~~(c) Unflattened Vehicle Bodies. Loads of unflattened vehicle bodies shall be secured as follows:~~

~~(1) Loads of a Single Tier. Except as otherwise provided, each body in a load consisting of a single tier shall be secured by at least two crossbinders.~~

Fig. 1. Illustrative of Section 1343(c)(1)

~~(A) Racks may be used in lieu of crossbinders provided all the bodies in a tier are transported horizontally.~~

~~(B) Each body loaded at an angle shall be secured by at least one crossbinder, and two or more such bodies shall be bound together by a unitizing binder. Unitizing binders shall comply with~~

~~crossbinder requirements in preceding Section 1341(b), and shall not be attached to the transporting vehicle.~~

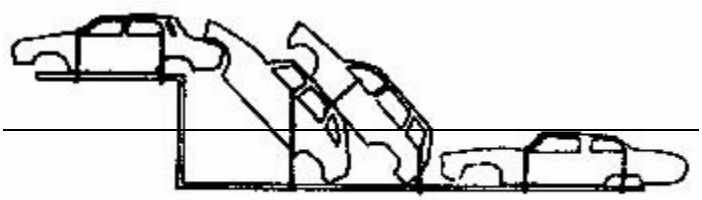


Fig. 2. Illustrative of Section 1343(c)(1)(B)

~~(2) Loads of Two or More Tiers. Loads consisting of two or more tiers shall be secured as follows:~~

~~(A) Each body in the bottom tier shall be secured by at least one crossbinder, and~~

~~(B) Each body above the bottom tier shall be secured by at least two crossbinders.~~

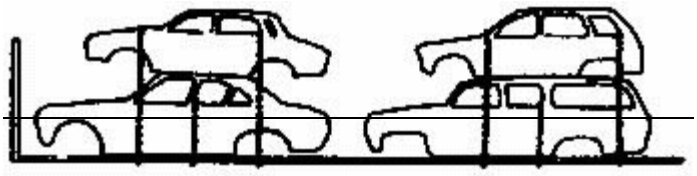


Fig. 3 Illustrative of Section 1343 (c) (2)

~~(d) Combination Loads. Vehicle bodies transported in combination with other types of junk and scrap metal shall be secured as follows:~~

~~(1) Each vehicle body transported above other junk and scrap metal shall be secured by at least two crossbinders.~~

~~(2) Crossbinders are not required on vehicle bodies transported as the bottom tier of a mixed load, provided the racks securing the load extend at least midheight of the body. (Figure 4)~~

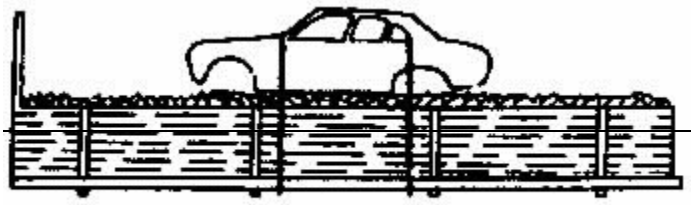


Fig. 4. Illustrative of Section 1343(d)

~~(3) Vehicle bodies may be used in lieu of rear racks on mixed loads if they provide security equivalent to that of end racks and each body is secured to the vehicle by at least two crossbinders.~~

~~Note: Authority and reference cited: Section 31510, Vehicle Code.~~

**~~1344~~**~~. Alternate Method of Compliance.~~

~~Application for any deviation from specific portions of these regulations shall be made in such form as may be prescribed by the department. In considering the application, the department will determine whether the suggested alternate method carries out the original intent of the regulation. Such alternate method shall be used only after application has been made to and written approval has been issued by the department. A copy of the written statement granting departmental approval of the alternate method of compliance shall be carried in each vehicle or combination of vehicles operating under such authorization and shall be presented for inspection immediately upon request by an authorized employee of the department, or any regularly employed and salaried police officer or deputy sheriff.~~

Note: Authority and reference cited: Section 31510, Vehicle Code.

## ARTICLE 6. STEEL COILS -LOADING, SECUREMENT, AND TRANSPORTATION

**1350**. Scope of Regulations.

This article shall apply to the highway transportation of coils of flat rolled steel with a unit weight of at least 4,000 pounds except the following:

(a) Coils Boxed or Framed. Coils boxed or framed with wood on the top, bottom and sides.

(b) Coils in Vans. Coils transported in vans and adequately secured against shifting.



Note: Authority cited: Section 2402, Vehicle Code. Reference: Section 31510, Vehicle Code.

**1351**. Definitions.

The following definitions shall apply for the purpose of this article.

(a) Coil Face. A "coil face" is the rounded outer surface of a coil.

(b) Coil Side. A "coil side" is the surface presented by the edge of a coiled length of strip or sheet steel.

(c) Coil. A "coil" is (1) a single coil; (2) a series of horizontal eye coils with abutting sides and eyes aligned; or (3) a series of coils with the eyes aligned and secured together or secured to a pallet or skids by straps to form a packaged unit.

(d) Row. A "row" is one or more coils aligned laterally across the vehicle.

(e) Group. A "group" is two or more rows with adjacent coil faces.

(f) Pigtail. A "pigtail" is a piece of wire rope used on the end of a chain binder to facilitate the use of a winch tightener.

(g) Fairlead. A "fairlead" is a device that serves as a guide for a binder to minimize chafing.

**1352**. General Provisions.

The following general provisions shall apply to the transportation of steel coils.

(a) Binder Requirements. Chain binders shall be used for the securement and transportation of steel coils; shall comply with requirements of Sections 1300 through 1305 of this code; and shall have a breaking strength of not less than 15,000 pounds. Wire rope pigtails used in conjunction with chain binders shall meet the following requirements.

(1) Pigtails shall have a breaking strength of at least 15,000 pounds and shall be in compliance with the requirements of Sections 1300 through 1305 of this code relating to wire rope.

(2) One end of a pigtail shall be permanently attached to a winch-type cable tightener and the other end shall be attached to a grabhook with a terminal eye formed by a pressed or swaged sleeve.

~~(3) Pigtails shall not be deflected more than 90 degrees by any fairlead and shall not exceed a length of 43 inches.~~

~~(4) Pigtails or any wire rope portion of a tensioned chain tightener shall not rub against any portion of the load, including "corner softeners."~~

~~(5) Fairleads used to deflect tensioned wire rope shall have rounded bearing surfaces of not less than 3/4 -inch and shall be designed to ensure retention of the rope. The length of stud-type fairleads shall be at least one and one-half times the diameter of the rope.~~

~~(6) Conditions of maintenance and use applicable to wire rope binders shall apply to the pigtails.~~

~~(b) Vehicle Beds and Deck Surfaces. Steel coils shall not be transported on frame- or chassis-type vehicles. This shall not prohibit the transportation of coils on vehicles equipped with lumber rollers provided the coils are supported by a solid deck surface permanently affixed to the vehicle. Coils shall not have direct bearing on any metal deck surface of the transporting vehicle.~~

~~(c) Cradles, Pallets, and Platforms. Cradles, platforms, or pallets shall be of a strength commensurate with the weight of the coils they sustain and shall provide rigid and stable support en route.~~

~~(d) Load Height and Stability. The height of steel coil loads shall not exceed one tier. All loading and securement requirements shall be met prior to the vehicle entering a highway and shall be so maintained en route by periodic inspection of the load. If evidence of load instability occurs, the vehicle shall be driven from the roadway and shall not again be moved on the highway until corrective load or binder adjustments are made to conform to these regulations when any of the following conditions exist:~~

~~(1) Separation between a coil and its required blocking~~

~~(2) Lack of required securement of the load~~

~~(3) A shifted or unstable load.~~

~~(e) Group Loading. Groups of coils shall be solidly loaded with all adjacent coils or pallets bearing against one another to prevent shifting.~~

~~(f) Fastening of Binders. The following provisions shall govern the fastening and securement of binders:~~

~~(1) Binders shall be secured to anchorages by permanent attachments, shackle-type couplers, or grabhooks. In emergencies binders may be temporarily secured to anchorages by other than the required methods if such alternate method provides a strength at least equal to that of the binder.~~

~~(2) Rub rail edges shall not be used as anchorages for binder grabhooks except as follows: Each hook of a binder passing over the top of a row may be secured to a rub rail having a minimum thickness of 1/4 -inch and hooks may be secured to the top edge of the rub rail at stake pockets provided the combined rub rail and stake pocket materials are of a thickness not less than 1/4 -inch.~~

~~(3) The metal strapping which secures a pallet, cradle, or platform to a coil shall not bear any strain imposed by a binder and, if necessary, spacers shall be used between adjacent coil faces to comply with this requirement.~~

~~**1353**. Horizontal Eye Coils -Loading and Blocking Requirements.~~

~~The following provisions shall apply to coils of flat rolled steel products transported with the eye horizontal.~~

~~(a) General Requirements.~~

~~The following general loading and blocking requirements shall apply to coils transported with the eye horizontal:~~

(1) Any coil with the eye telescoped 4 or more inches to the side shall have a unitizing binder applied as a bellywrapper to prevent further telescoping. Such binder shall pass through the eye and across the outer surface of the coil and may or may not be secured to the vehicle.

(2) All coils in a row with eyes in line shall be of approximately equal diameter.

(3) The total weight of any row composed of two or more coils with eyes aligned parallel to the ends of the vehicle shall not exceed 20,000 pounds (Figure 1).

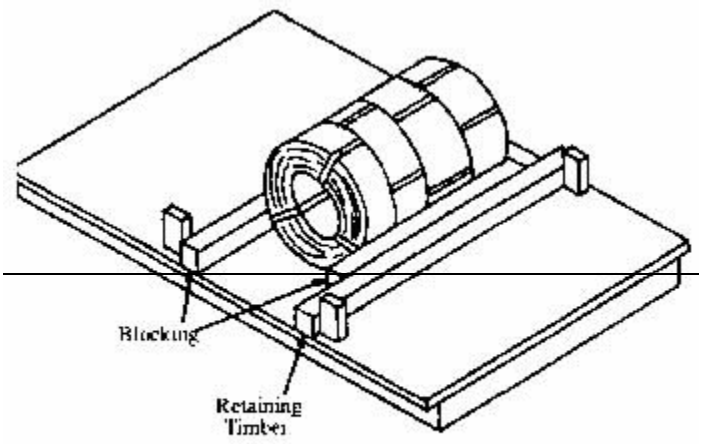



Fig. 1. Illustrative of Section 1353(a)(3) and (4), and (b)(1)

(4) Except as provided herein, coils shall be tightly blocked across the full width of both faces of a single row or the outside faces of the end rows of a group. Coils secured to cradles, pallets, or platforms by metal straps or bands shall be exempt from the blocking requirements. (Figures 1, 2, 3, 4, and 5).

(5) Except as provided herein, all blocking secured by cleats shall be connected at each side of a row or group to the blocking at the opposite face of the row or group by a connecting timber nailed to the top of the blocks (Figures 2, 3, and 4). Note: Connecting timbers shall not be required on rows with the eyes extending parallel to the ends of the vehicle when the application

~~of such timbers exceeds the maximum width limitation of 96 inches as provided by Section 35100 of the Vehicle Code.~~

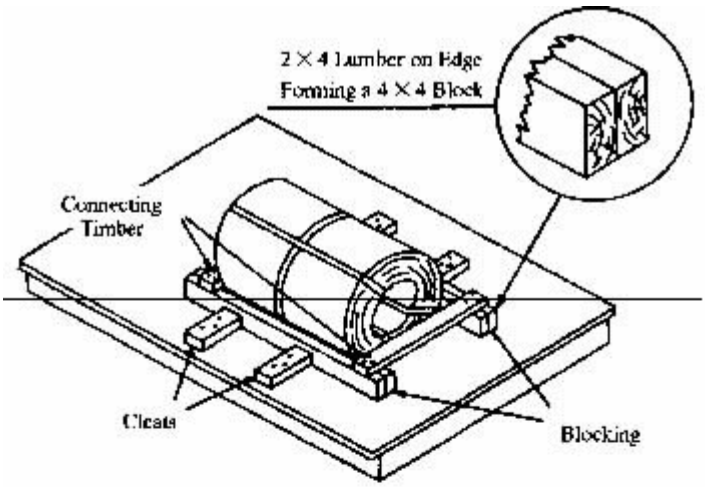



Fig. 2 Illustrative of Section 1363 (a) (5), (b)(2), and (d)

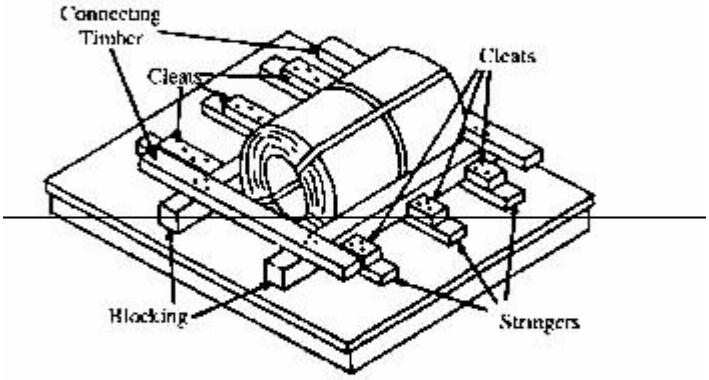



Fig. 3. Illustrative of Section 1353(a)(5), (b)(2), (d), and (f)

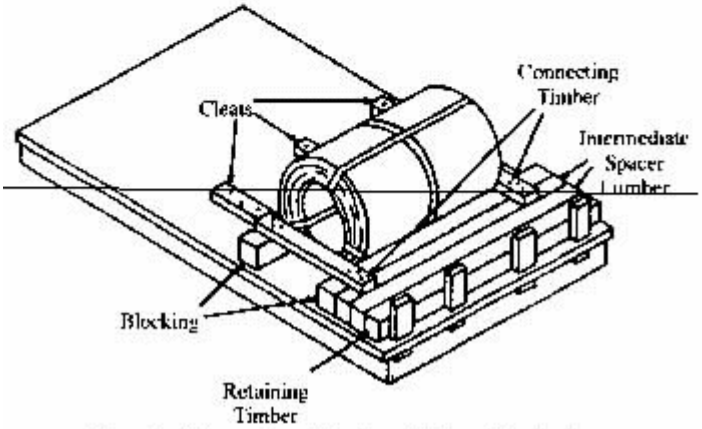



Fig. 4. Illustrative of Section 1353(a)(5), (b)(1) and (2), (c)(5), and (d)

~~(6) Each coil within a row requiring blocking shall bear solidly against the block.~~

~~(7) Coils shall rest on and be supported by the same surface that supports the blocking.~~

~~(8) Cleats and timber connecting opposite blocking shall be not less than 2- by 4-inch nominal size lumber laid flat.~~

~~(9) Nail-split lumber is prohibited in the securement of the blocking.~~

~~(10) Nails used in the securement of the blocking shall be not less than 16- penny (3 1/2 inches) in size, shall not lean away from the blocking, and shall be driven to the head when possible.~~

~~(11) Any wood surface interposed between a coil and a metal deck shall have a minimum thickness of 1 1/2 inches when blocking is retained by nailed cleats.~~

~~(b) Blocking. Blocking shall be not less than nominal size 4- by 4-inch lumber of a length not less than the width of the row being blocked. Blocking shall be of one piece except that the block may consist of two pieces of 2- by 4-inch lumber of the required length standing on edge and laminated so as to form a nominal size 4- by 4-inch block (Figure 2). The blocking shall be secured against the face of a row by one or a combination of the following methods:~~

~~(1) Stakes in stake pockets (Figures 1, 4, and 5)~~

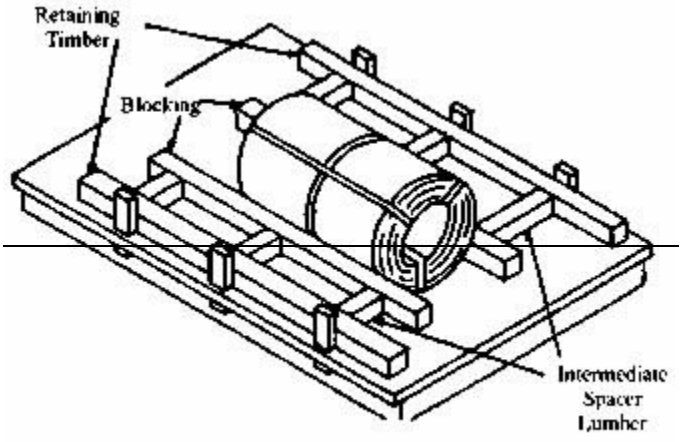



Fig. 5. Illustrative of Section 1353(b)(1) and (c)(5)

~~(2) Cleats at right angles to the blocking (Figures 2, 3, and 4).~~

~~(c) Stake Blocking. The following provisions shall apply when blocking is retained by stakes:~~

~~(1) The block shall be secured against the face of a row by a retaining timber and such timber shall be retained by the maximum number of stakes for which stake pockets are available. The retaining timber, which may be used as the block, shall be of a size not less than the blocking, of a strength at least equal to Douglas fir, and shall be either of one piece or of laminated construction without strength-impairing defects.~~

~~(2) Stakes shall be constructed of heavy-gauge steel or straight-grained hardwood free of strength-impairing defects. Stake pockets shall be at least equal in strength to the stakes.~~

~~(3) Stakes shall fit firmly in the stake pocket, except that in rectangular pockets, heavy-gauge steel pipe stock having an outside diameter of not less than 5.08 cm (2 in.) may be used.~~

~~(4) Stakes shall be of a height not less than the blocking bearing against them.~~

~~(5) Intermediate spacer lumber applied between the block and the retaining timber shall be of a height not less than the blocking and shall bear against the block at the center and ends of the row. Spacer lumber may extend either parallel or laterally to the blocking (Figures 4 and 5).~~

~~(6) As an alternative to foregoing subsections (2) through (5), blocking racks (Figure 5a), applied in pairs, may be used to secure required blocking. Each blocking rack shall be equipped with not less than 2 stake pocket inserts which shall fit firmly in not less than 2 stake pockets of the transporting vehicle. Structural components of blocking racks shall be constructed of not less than .48 cm ( 3/16 -in.) steel plate. Both ends shall provide rigid securement for blocking and one end of each rack shall be capable of advancing the blocking until it bears solidly and evenly against the coil. (See Figure 5b.) The advancing mechanism shall be equipped with a locking apparatus to prevent the blocking from loosening during transport.~~

Fig. 5a. Blocking Rack
Illustrative of Section 1353(c)(6)

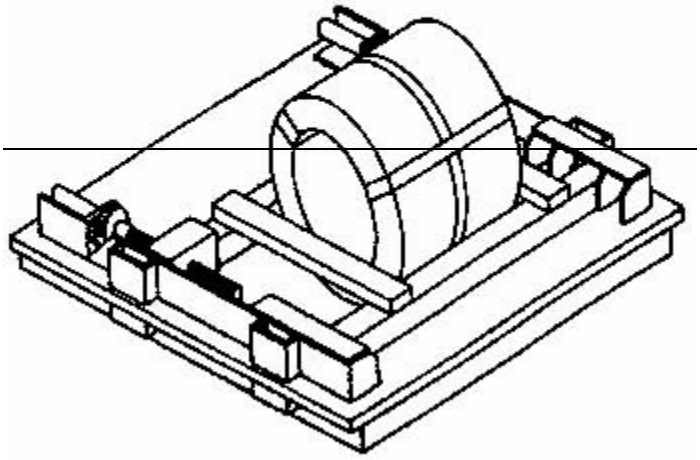


Fig. 5b. Coil Secured by Blocking Racks
Illustrative of Section 1353(c)(6)

~~(d) Right-Angle Cleats. The following provisions shall apply when blocking is retained by cleats placed at right angles to the block (Figures 2, 3, and 4):~~

~~(1) Cleats shall be not less than 9 inches in length.~~

~~(2) Cleats shall bear tightly against the blocking and each cleat shall be solidly secured to decking or stringers by at least three nails spaced as equally as is practicable.~~

~~(3) The number of cleats at each face of a row shall be at least the number required in the following table:~~

Table 1. Number of Cleats at Each Face of a Row

| *Width of Row (inches)* | *Number of Cleats* |
|---|---|
| 36 or less | 2 |
| 36 to 72 | 3 |
| 72 or more | 4 |

(4) Cleats shall be spaced as equally as is practicable within the width of the row.

(e) Connecting Timber. The timber connecting the blocking at opposite faces of a row or group shall be applied as close alongside the row or group as is practicable and shall be secured to the top of each block by not less than three nails. When the distance between the blocks at opposite ends of a group does not exceed 8 feet, the connecting timber at each side of the group shall be one-piece lumber.

(f) Stringers. The following provisions shall apply when coils are transported on stringers (Figure 3):

(1) Stringers shall be not less than 2- by 4-inch nominal size lumber of one piece laid flat for the full length of the group bearing upon it. (2) When blocking is secured by cleats, the stringers shall be of a number and position as may be necessary to permit compliance with cleating requirements.

Note: Authority and reference cited: Section 31510, Vehicle Code.

**1354**. Horizontal Eye Coils -Application of Binders.

The following provisions shall apply to the application of binders securing coils transported with the eye horizontal. All required binders shall pass through the eyes of the coils.

~~(a) Coils Loaded With Eye Transverse to Vehicle. The following binder requirements shall apply to coils transported with the eye horizontal and extending parallel to the ends of the vehicle (Figures 6 through 16 Required blocking not shown):~~

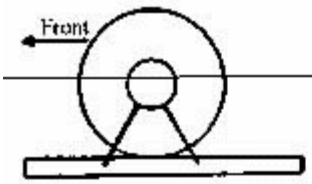



Fig. 6. 12,000 Lbs. and Under (2 Binders)

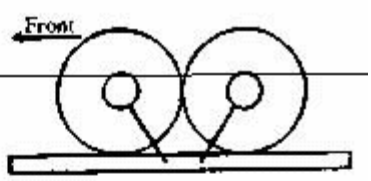



Fig. 7. 12,000 Lbs. and Under (2 Binders)

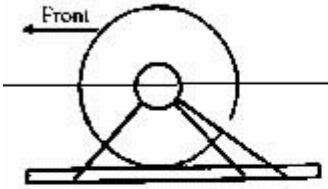



Fig. 8. 12,001 to 25,000 Lbs (3 Binders)

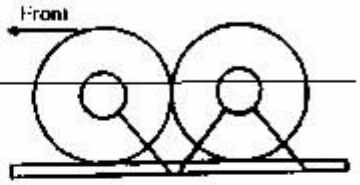



Fig. 9. 12,001 to 25,000 Lbs (3 Binders)

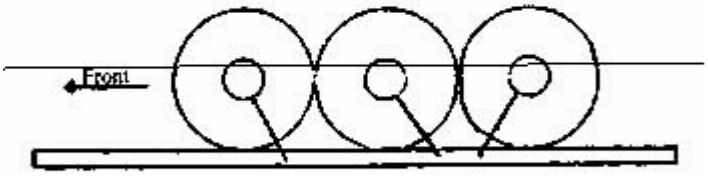



Fig. 10. 12,001 to 25,000 Lbs (3 Binders)

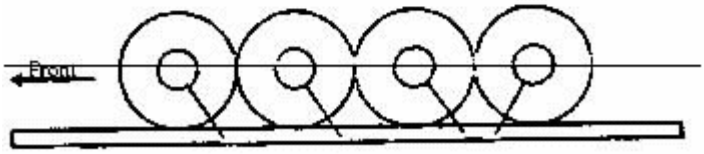



Fig. 11. 12,501 to 25,000 Lbs. (3 Binders Required by Table II Plus 1 Binder to Rear on Each Row in Excess of 3)

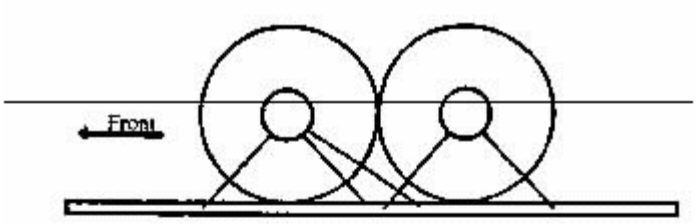



Fig. 12. Over 25,000 Lbs
(5 Binders)

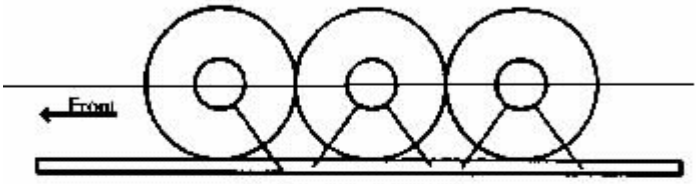



Fig. 13. Over 25,000 Lbs.
(5 Binders)

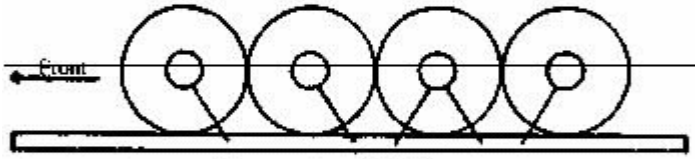



Fig. 14. Over 25,000 Lbs.
(5 Binders)

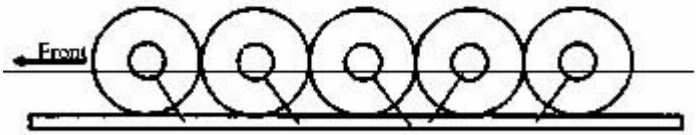



Fig. 15. Over 25,000 Lbs
(5 Binders)

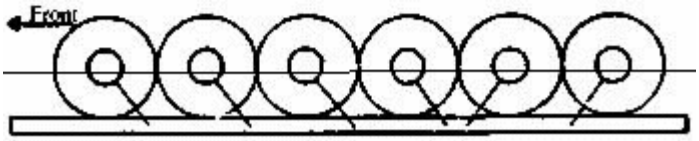



Fig. 16. Over 25,000 Lbs.
(5 Binders Required by Table II Plus
1 Binder to Rear on Each Row in Excess of 5)

~~(1) Number of Binders and Direction of Anchorages.~~

~~The number of binders securing any single row or group of rows shall be determined by the weight of the row or total weight of the group with a minimum of one binder to each row within~~

a group. The binders shall be secured to the vehicle at each end of the row and shall be anchored ahead or behind the row as required by the direction of the anchorages in the following table:

Table II. Number of Binders For Any Single Row or Each Group of Rows, and Direction of Anchorages

| Weight of Row or group (pounds) | Total binders | Direction of anchorages | |
|---|---|---|---|
| | | Ahead | Behind |
| 12,500 or less | 2 | 1 | 1 |
| 12,501 to 25,000 | 3 | 1 | 2 |
| 25,001 or more | 5 | 2 | 3 |

(2) Location of Anchorage. For binders anchored to the side of a vehicle, the outside diameter of the coil shall determine the minimum distance between the center of the coil and the anchorage for any binder securing it to the vehicle. The distance shall be measured horizontally along the side of the vehicle and shall be not less than shown in Table III and Figure 17.

Table III. Minimum Horizontal Distance - Center of Coil to Anchorage

| Coil diameter (inches) | Minimum horizontal distance (inches) | |
|---|---|---|
| | Unpalletized coils | Palletized coils |
| Less than 30 | 18 | 24 |
| 30 to 42 | 24 | 30 |
| 42 or more | 36 | 42 |

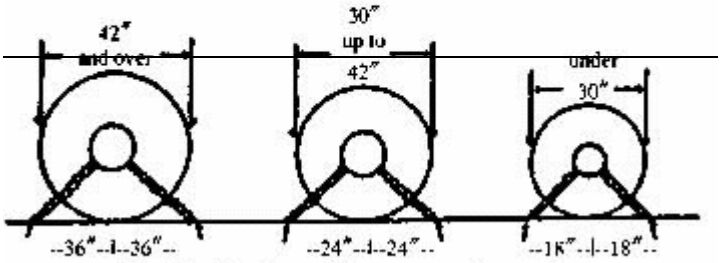



Fig. 17. Minimum Distance—Coil to Anchorage (Unpalletized Coils) (Required blocking not shown)

~~(3) Position of Binders -Coil Group. Binders required by Table II shall be applied to a group of rows as follows:~~

~~(A) Binders required to be anchored behind shall be applied to consecutive rows from the front of the group with one binder to each row until the required number of binders have been applied. A group requiring binders of a number anchored behind in excess of the number of rows in the group shall repeat the procedure, starting with the front row of the group (Figure 12).~~

~~(B) Binders required to be anchored ahead shall be applied to consecutive rows from the rear of the group until the required number of binders have been applied.~~

~~Any row not secured to the vehicle after the number of binders required by Table II have been applied, shall be secured to the vehicle by at least one binder anchored behind the row (Figures 11 and 16).~~

~~(b) Coils Transported With Eyes Parallel to Sides of Vehicle. The following provisions shall govern the number and position of binders for coils transported with the eyes horizontal and extending parallel to the sides of the vehicle (Figure 18; required blocking shown in Figures 1 through 5).~~

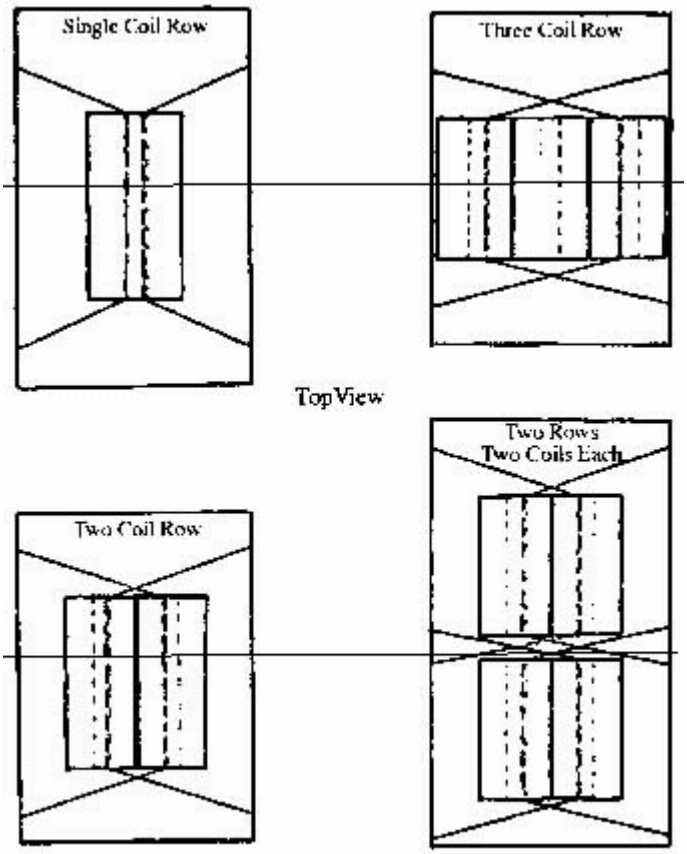



Fig 18. Illustrative of Section 1154(b)

~~(1) Single Coil. A row consisting of a single coil shall be secured with two binders. One binder shall have both ends anchored to the right side of the vehicle and one binder shall have both ends anchored to the left side of the vehicle.~~

~~(2) Coil Group. A row consisting of two or more coils shall be secured by a binder applied to each of the outside coils in the row. Both ends of the binder securing the left coil shall be secured to the right side of the vehicle and both ends of the binder securing the right coil shall be anchored to the left side of the vehicle.~~

**1355**. Vertical Eye Coils.

The following provisions shall govern the loading and securement of coils transported with the eyes vertical when such coils are secured by the binders specified in Section 1352(a) (Figures 19 through 23).

(a) General Requirements. The following general requirements shall apply to coils transported with the eyes vertical:

(1) All coils in each row shall be of the same approximate height. As an alternative, blocking lumber may be interposed between the top of a coil and any binder over the top of the row so that all coils in the row receive solid bearing from the binder.

(2) Binders required to be secured at the base of a coil shall bear solidly against the coil at a height which shall not exceed 6 inches from the bottom of the coil.

(3) No row in a group of coils shall be wider across the vehicle than the front row of the group.

(4) All coils in a row shall have eyes approximately aligned and the binder over the top of the row shall be centered over the row.

(5) All binders shall extend across the width of the vehicle with each end anchored at or near opposite sides of the vehicle, except as otherwise provided.

(b) Single Row -Single Coil. A single row containing a single coil shall be secured with three binders applied by one of the following methods:

(1) One binder shall pass over the top of each coil; one binder shall pass around the front of the coil at its base with both ends anchored to the vehicle towards the rear; and one binder shall pass around the rear of the coil with both ends anchored to the vehicle towards the front (Figure 19).

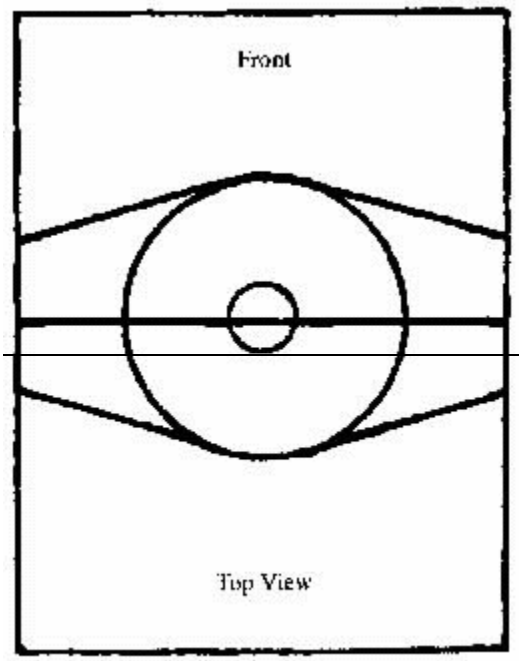



Fig. 19 Illustrative of Section 1355 (b)(1)

~~(2) One binder shall extend across the front of the coil at its base with each end of the binder anchored towards the rear and two binders shall pass around the sides of the coil near the top in the following manner: one binder shall pass around the left side of the coil with both ends anchored to the right side of the vehicle and one binder shall pass around the right side of the coil with both ends anchored to the left side of the vehicle. The binders shall be secured in position by a fixture extending across the top of the coil and such fixture shall have a strength at least equal to the binders (Figure 20).~~

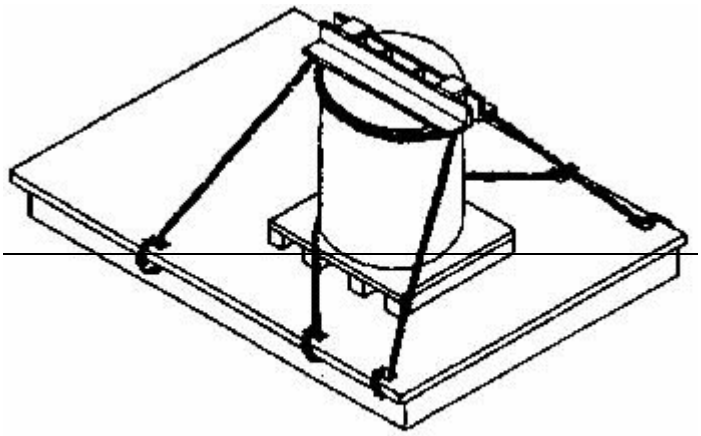


Fig. 20. Illustrative of Section 1355(b)(2) and (d)(2)

~~(c) Single Row--Multiple Coils. A single row containing two or more coils shall be secured with at least three binders applied as shown in Figure 21:~~

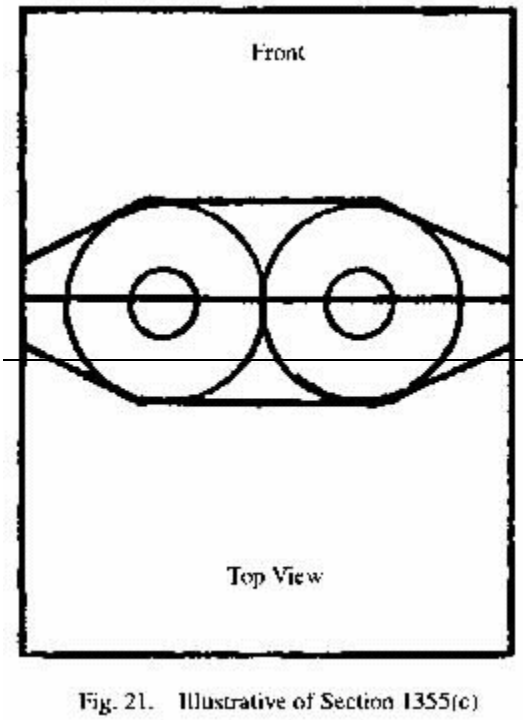



Fig. 21. Illustrative of Section 1355(c)

~~(1) One binder shall extend over the top of the row.~~

~~(2) One binder shall extend across the front of the row at its base with each end of the binder anchored towards the rear.~~

~~(3) One binder shall extend across the rear of the row at its base with each end of the binder anchored towards the front.~~

~~(d) Group of Rows - Single Coil in Each Row. A group of rows containing a single coil in each row shall be secured by one of the following methods:~~

~~(1) One binder shall extend over the top of each row in the group. One binder shall pass around the front of each coil at its base with both ends of the binder anchored towards the rear. One binder shall pass around the rear of the rear coil in the group at its base and both ends of the binder shall be anchored toward the front (Figure 22).~~

~~(2) Two binders shall pass around the sides of each coil near the top in the same manner as described in Section 1355(b)(2). One binder shall pass around the front of the group at the base of the front coil and both ends of the binder shall be anchored toward the rear; one binder shall pass around the rear of the rear coil in the group at its base and both ends of the binder shall be anchored towards the front (Figures 20 and 22).~~

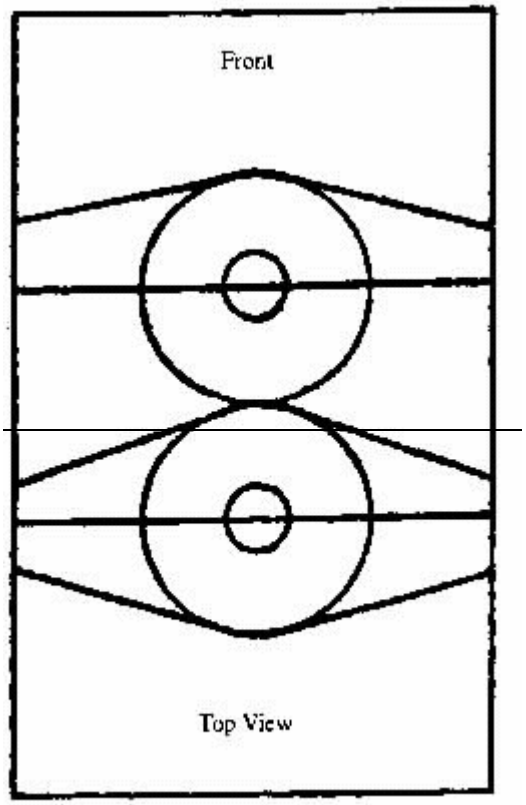



Fig. 22. Illustrative of Section 1355(d)(1) and (2)

~~(e) Group of Multiple Coil Rows. Any group containing a row having two or more coils shall be secured in the following manner (Figure 23):~~

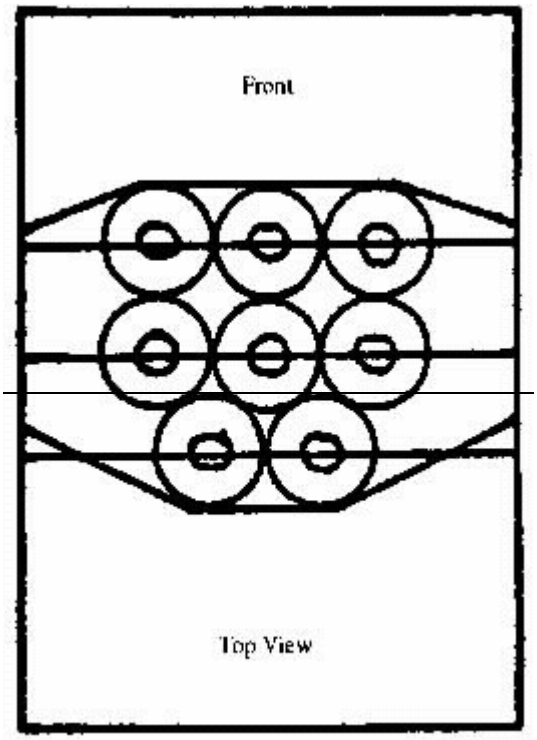


Fig. 23. Illustrative of Section 1355(e)

~~(1) One binder shall extend over the top of each row.~~

~~(2) One binder shall pass around the front of the group at the base of the front row and each end of the binder shall be anchored towards the rear.~~

~~(3) One binder shall pass around the rear of the group at the base of the rear row and each end of the binder shall be anchored towards the front.~~

~~**1356**. Alternate Method of Compliance.~~

~~Application for any deviation from specific portions of these regulations shall be made in such form as may be prescribed by the department. In considering the application, the department will determine whether the suggested alternate method carries out the original intent of the regulation.~~

Such alternate method shall be used only after application has been made to and written approval has been issued by the department. A copy of the written statement granting departmental approval of the alternate method of compliance shall be carried in each vehicle or combination of vehicles operating under such authorization and shall be presented for inspection immediately upon request by an authorized employee of the department, or any regularly employed and salaried police officer or deputy sheriff.

Note: Authority and reference cited: Section 31510, Vehicle Code.

## ARTICLE 7. STEEL PLATE, SHEET, AND TINPLATE -LOADING AND SECUREMENT

**1360**. Scope of Regulations.

This article shall apply to the highway transportation of flat steel products (plate, sheet, and tinplate) in other than coil form when transported on flatbed or open-top vehicles in individual or combined quantities of more than 4,000 pounds.

Note: Authority cited: Section 2402, Vehicle Code. Reference: 31510, Vehicle Code.

**1361**. Definitions.

The following definitions shall apply for the purpose of this article.

(a) Plate. "Plate" is any flat steel product at least 12 inches in width and at least 3/16 -inch in thickness.

(b) Sheet. "Sheet" is any flat steel product including corrugated roofing, siding, flooring, and decking, which is at least 12 inches in width and less than 3/16 -inch in thickness.

(c) Hand Bundle. A "hand bundle" is a bound unit which can be handled without mechanical equipment.

(d) Lift. A "lift" is a shipping unit of flat steel which requires mechanical equipment for handling.

(e) Package. A "package" is a lift or a number of lifts or hand bundles bound in at least one direction to make a single unit.

(f) Pile. A "pile" is a unit of two or more lifts or hand bundles loaded one above the other. Adjacent piles jointly secured by a common tiedown shall be considered one pile.

(g) Group. A "group" is a unit of two or more hand bundles, packages, lifts, or piles loaded in close proximity and jointly secured by one or more common tiedowns. All lading within a group shall be solidly blocked against any adjacent lading in the same group.

(h) Separator. A "separator" is a length of lumber used vertically or horizontally to support lifts or maintain clearance between adjacent portions of the load without tension ties to the lift.

(i) Pigtail. A "pigtail" is a piece of wire rope used on the end of a chain binder to facilitate the use of a winch tightener.

(j) Fairlead. A "fairlead" is a device that serves as a guide for a binder to minimize chafing.

**1362**. General Provisions.

The following general provisions shall apply to the transportation of steel plate, sheet steel, and tinplate.

(a) Binder Requirements. Chain binders shall be used for the loading, securement, and transportation of flat steel products except loads of unit ized corrugated roofing, siding, flooring, or decking may be secured by .95 cm ( 3/8 -in.) wire rope binders with metal softeners positioned under the wire rope at corners to protect the binders from wear. Chain binders shall comply with requirements of Sections 1300 through 1305 of this code and shall have a minimum breaking strength of not less than 6804 kg (15,000 lb). Wire rope pigtails used in conjunction with chain binders shall meet the following requirements:

(1) Pigtails shall have a breaking strength of at least 6804 kg (15,000 lb) and shall be in compliance with the requirements of Sections 1300 through 1305 of this code relating to wire rope.

(2) One end of the pigtail shall be permanently attached to a winch-type cable tightener and the other end shall be attached to a grabhook with a terminal eye formed by a pressed or swaged sleeve.

(3) Pigtails shall not be deflected more than 90 degrees by any fairlead and shall not exceed a length of 109 cm (43 in.).

(4) Pigtails or any wire rope portion of a tensioned chain tightener shall not rub nor bind against any portion of the load, including "corner softeners."

(5) Fairleads used to deflect tensioned wire rope shall have rounded bearing surfaces of not less than 1.9 cm ( 3/4 -in.) and shall be designed to ensure retention of the rope. The length of stud-type fairleads shall be at least 1 1/2 times the diameter of the rope.

(6) Conditions of maintenance and use applicable to wire rope binders shall apply to the pigtails.

(b) Vehicle Beds and Deck Surfaces. Loads of flat steel products shall not be transported on frame- or chassis-type vehicles. This provision shall not prohibit transporting flat steel products on a vehicle equipped with lumber rollers, provided the lading is supported by a solid deck surface which is permanently affixed to the vehicle (See Fig. 1). Loads shall not have direct bearing on metal deck surfaces of the transporting vehicle.

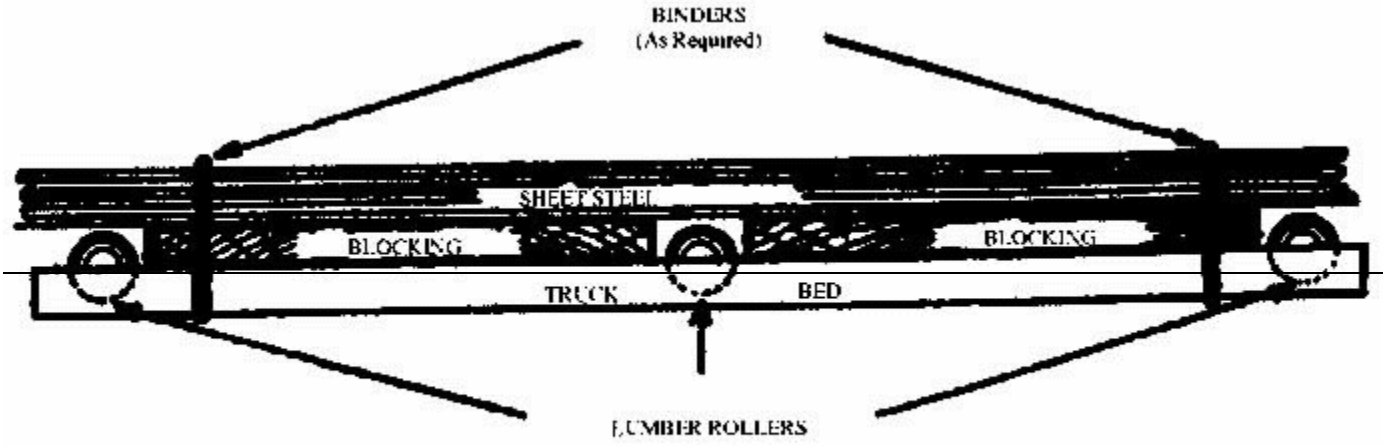



Fig. 1

(c) Cradles, Pallets, and Platforms. Cradles, platforms or pallets shall be of a strength commensurate with the weight of the loads they sustain and shall provide rigid and stable support en route.

(d) Stability of Loads. Prior to a vehicle entering a highway, all binders shall be tightened and locked, and all loading and securement requirements shall be met and maintained en route by periodic inspection. If evidence of load instability occurs, the vehicle shall be driven from the roadway as soon as practicable and shall not be moved upon the highway again until adjustments are made to bring the load into conformance with this article.

Note: Authority and reference cited: Section 31510, Vehicle Code.

**1363**. Securement of Loads.

All lading on the vehicle shall be secured against longitudinal or lateral shifting.

(a) Application of Binders. Crossbinders shall extend over the load with each end attached to opposite sides of the vehicle approximately opposite each other. Crossbinders shall be of a number sufficient to ensure the lateral securement of all lading on the vehicle and shall be applied along the length of the load, group, or pile in accordance with the weight distribution of the load. Each individual binder shall bear on the load at solidly supported bearing points.

(1) Each lift of a size not more than three feet in any dimension or any row of such lifts loaded side by side in a group shall be secured by at least one crossbinder.

(2) Each lift of a size in excess of three feet in any dimension, each group containing any lift of such size, and each pile shall be secured by not less than two crossbinders. Additional crossbinders shall be applied to any lift, group, or pile as necessary to comply with the following:

~~*Weight in pounds* *Total binders*~~

~~20,000 or less 2~~

~~20,001 to 30,000 3~~

~~30,001 to 40,000 4~~

~~40,001 to 50,000 5~~

~~(3) The weight of each group or pile shall be computed individually to determine the number of crossbinders to be applied in accordance with the preceding weight table.~~

~~(b) Fastening of Binders. The following provisions shall govern the fastening and securement of binders:~~

~~(1) Binders shall be secured to anchorages by permanent attachments, shackle-type couplers, or grabhooks. In emergencies, binders may be temporarily secured to anchorages by other than the required methods if such alternate method provides a strength at least equal to that of the binder.~~

~~(2) Rub rail edges shall not be used as anchorages for binder grabhooks except binder grabhooks may be secured to a rub rail having a minimum thickness of 1/4 inch and hooks may be secured to the top edge of the rub rail at stake pockets provided the combined rub rail and stake pocket materials are of a thickness not less than 1/4 inch.~~

~~(3) Separators shall be used as necessary to keep metal strapping used to secure a load to a pallet, skid, or platform from bearing any strain imposed by a binder.~~

~~(c) Blocking. Lifts and piles loaded side by side shall be solidly blocked against each other. Separator blocking shall be tightly secured to prevent displacement.~~

**1364**. Securing of Lifts.

The following provisions shall apply to lifts of sheet steel when such lifts are not boxed, crated, or secured to skids, pallets, or platforms:

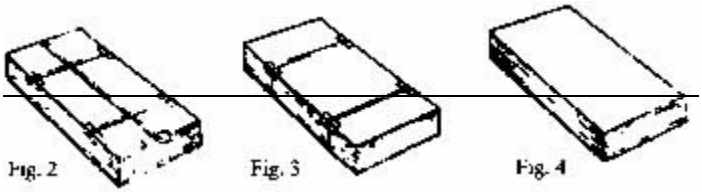
(a) Tension Ties. High-tension bands, straps, or wires shall be machine-tensioned and sealed, or twist-tied, respectively. Individual bands, straps, or wires shall have a breaking strength of not less than 2,000 pounds and dimensions not less than that of 3/4 - by .031-inch flat or 10-gage round steel strapping. The use of secondhand or reclaimed high-tension bands, straps, or wires or of common wires as tension ties is prohibited.

(b) Sheet. Lifts of sheets shall be secured to meet the following requirements:

(1) Oil surfaced sheets, hot or cold rolled, shall be tension tied with two crosswise ties and one lengthwise tie, as shown in Figure 2.

(2) Dry surfaced sheets, cold rolled, shall be tension tied with two crosswise ties, as shown in Figure 3.

(3) Dry surfaced sheets - hot rolled, galvanized flat sheets, and formed sheets (corrugated, formed roofing, etc.), in standard lifts - may be loaded without tension tying, as shown in Figure 4.



**1365**. Stacking of Lifts.

The following provisions shall apply when lifts of steel plate, steel sheet, and tinplate are loaded in a pile:

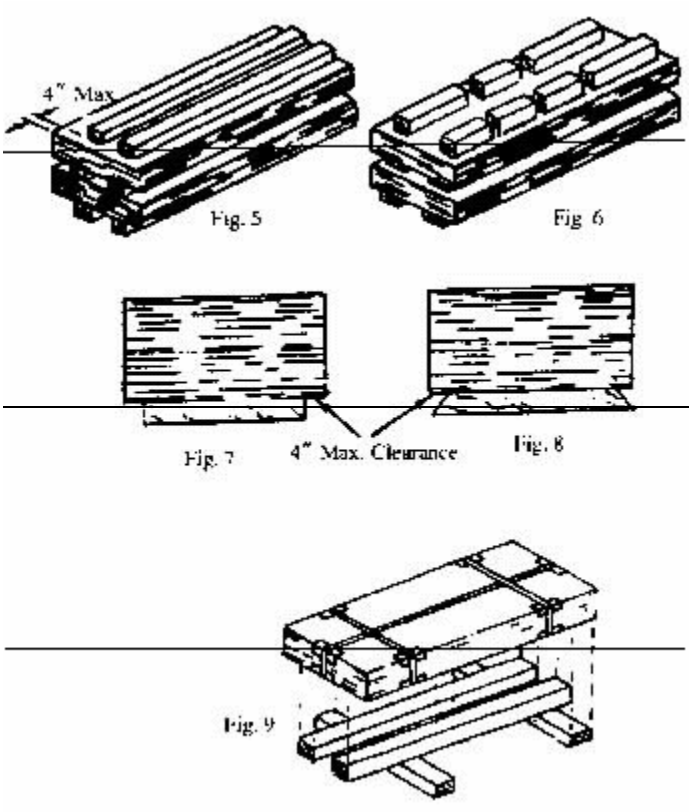
(a) Stability of Pile. Lifts shall be loaded to achieve maximum stability of the pile with the widest lift at the bottom, and successive lifts in order of decreasing width. Where different lift lengths would make compliance with this provision impractical, the longest lift may be loaded at the bottom of the pile provided sufficient blocking is used to maintain pile stability.

(b) Height of Pile. Subject to clearance requirements for mechanical handling equipment, the height of a pile shall be held to a minimum by distributing the lading among the maximum number of piles that can be constructed upon the deck surface of the vehicle. The overall height of a pile of lifts, measured from the vehicle bed to the top surface of the pile, shall not exceed two-thirds of the average width of the pile. This subsection shall not apply to loads of unitized corrugated roofing, siding, flooring, or decking.

(c) Bearing Surfaces. Lifts shall present reasonably flat, squared-off bearing surfaces for the full dimension of the lift along the direction in which the separators extend, subject to clearances required for mechanical loading or unloading. Irregularly shaped lifts or those containing pieces of different sizes or clip separators shall have filler lumber secured within the lift as necessary to provide a reasonably flat, squared-off bearing surface.

(d) Separators. Separators used to support lifts shall be of sufficient size and number and so positioned as to prevent sagging, bending, shifting, or other evidence of instability or displacement en route. Separators between lifts must be of the same height, as shown in Figure 5. Lengthwise separators may be made up of two or more pieces, as shown in Figure 6. Crosswise

separators must be positioned to support the load, as shown in Figures 7 and 8. Both lengthwise and crosswise separators may be used to support a single lift or pile, as shown in Figure 9.




(e) Stiffener Blocking. Lift edges shall be supported under the tiedowns by stiffener blocking, when necessary, to prevent bowing, bending, or other distortion affecting the stability and securement of the pile.

Note: Authority and reference cited: Section 31510, Vehicle Code.

**1366**. Alternate Method of Compliance.

Application for any deviation from specific portions of these regulations shall be made in such form as may be prescribed by the department.

In considering the application, the department will determine whether the suggested alternate method carries out the original intent of the regulation. Such alternate method shall be used only after application has been made to and written approval has been issued by the department. A copy of the written statement granting departmental approval of the alternate method of compliance shall be carried in each vehicle or combination of vehicles operating under such authorization and shall be presented for inspection immediately upon request by an authorized employee of the department, or any regularly employed and salaried police officer or deputy sheriff.

Note: Authority and reference cited: Section 31510, Vehicle Code.

## ARTICLE 8. EMPTY WOODEN BOXES–LOADING, SECUREMENT, AND TRANSPORTATION

**1370**. Scope of Regulations.

This article shall apply to the loading, securement, and transportation of empty wooden boxes not more than 36 inches long, 24 inches wide, and 12 inches high, when more than 100 such boxes are transported on a highway. Size shall be determined by inside dimensions of the box, excluding cleats, separators, or other attachments. This article shall not apply to loads transported in vans or contained on four sides by racks.

*Subject* *Section*

Definitions 1371

General Provisions 1372

Construction of Loads 1373

Securement of Loads 1374

Alternate Method of Compliance 1375

Note: Authority and reference cited: Section 31530, Vehicle Code.

**1371**. Definitions.

The following definitions shall apply for the purposes of this article.

(a) Stack. A "stack" is a single column of nested or unnested boxes loaded one above the other.

(b) Row. A "row" consists of two or more stacks of boxes loaded parallel either to the sides or the ends of the vehicle bed.

(c) Course. A "course" is one layer of boxes.

(d) Corner Iron. A corner iron is a section of angle iron or right-angled steel with a boxed end and a hook used in conjunction with perimeter binders. The hook shall be welded to the outer surface of the angle iron, shall have a strength not less than that of 1/2 -inch cold rolled steel, and shall have a radius of at least 3/8 -inch to permit free movement of the binder. Corner irons shall meet one of the following construction requirements:

(1) At least a 3- by 3- by 3/16 -inch angle iron not less than 26 inches in length, a hook not less than 10 or more than 13 inches from the top outside corner, and topped by not less than a squared and welded 10-gage ( 9/64 -inch) steel plate (Figure 1); or

~~(2) At least 8- by 8-inch, 12-gage ( 7/64- inch) or 11 1/2 - by 11 1/2 -inch, 14-gage ( 5/64- inch) steel not less than 48 inches in length with at least a 3/4- inch double thickness at each outer edge, a hook not less than 10 or more than 24 inches from the top outside corner, and topped by not less than a squared and welded 10-gage ( 9/64- inch) steel plate.~~

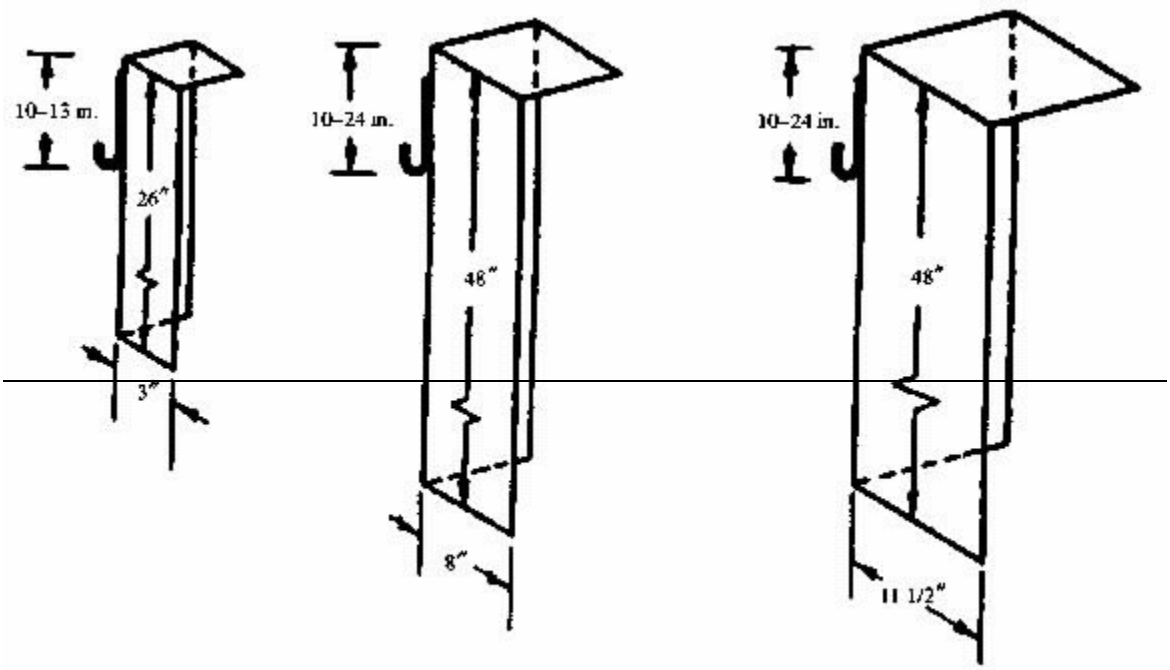



Fig. 1. Corner Irons
Illustrative of Sections 1371(d)(1) or (2)

~~Note: Authority and reference cited: Section 31530, Vehicle Code.~~

**~~1372~~**~~. General Provisions.~~

~~Binders used in the loading, securement, and transportation of empty wooden boxes shall meet the requirements of Sections 1300 through 1305 of this code and shall comply with the following additional requirements.~~

~~(a) Longitudinal Binders. Longitudinal binders shall have a breaking strength or load rating of not less than 5,400 pounds and shall be limited to the following types:~~

~~(1) Chain~~

~~(2) Wire rope~~

~~(3) Manila rope~~

~~(4) Synthetic fiber rope~~

~~(5) Synthetic webbing~~

~~(b) Perimeter Binders. Perimeter binders shall have a breaking strength or load rating of not less than 5,400 pounds and shall be limited to the following types:~~

~~(1) Chain~~

~~(2) Wire rope~~

~~(3) Manila rope~~

~~(4) Synthetic fiber rope~~

~~(c) Crossbinders. Crossbinders shall have a breaking strength or load rating of not less than 2,500 pounds and shall be limited to the following types:~~

~~(1) Chain~~

~~(2) Wire rope~~

~~(3) Manila rope~~

~~(4) Synthetic fiber rope~~

~~(5) Synthetic webbing~~

~~(d) Corner Irons. Corner irons in compliance with construction requirements of preceding Section 1371(d) shall be used in conjunction with perimeter binders.~~

~~(e) Winch Attachments. Winch attachments and anchorages used with perimeter binders shall be as uniformly spaced from the vehicle centerline and as close to the outside edge of the vehicle bed as is practicable (in no case more than 28 inches from corners on the ends of the bed, nor more than 60 inches from corners on the sides of the bed).~~

~~(f) Stability of Load. All loading and securement requirements shall be met prior to a vehicle entering a highway and shall be so maintained en route by periodic inspection of the load. If there is any evidence of load instability, the vehicle shall be driven from the roadway and shall not again be moved on the highway until corrective load or securement adjustments are made to conform to these regulations.~~

~~(g) V-Boards (V-Bars). When V-boards (V-bars) are used, they shall be positioned at the top edge of the load, beneath the binders, and shall be in compliance with the following requirements:~~

~~(1) V-boards shall consist of two parallel pieces of lumber, metal, or other material not more than 12 feet in length, attached together near each end by flexible material. V-boards more than 6 feet in length shall also be attached at the approximate midpoint.~~

~~(2) V-boards shall be of sufficient length to restrain at least one-half of each box to which they are applied. As far as is practicable, multiple binders shall be uniformly spaced over the entire length of a V-board.~~

~~(3) Materials used in the construction of V-boards shall be of a strength not less than that of nominal size 1- by 3-inch Douglas fir. Lumber V-boards shall be free of strength-impairing knots.~~

~~Note: Authority and reference cited: Section 31530, Vehicle Code.~~

**1373**. Construction of Loads.

The following provisions shall govern the construction of loads of empty wooden boxes.

(a) Construction. Loads shall be constructed either of compactly nested boxes or of unnested boxes with all adjoining box surfaces within a stack solidly abutted against each other without gaps or openings.

(1) Uniform Height of Load. Loads should consist of stacks of uniform height to facilitate load stability. Every stack which does not conform to the height of the rest of the load, and every unstacked box on top of the load shall be restrained by an individual crossbinder.

(2) Permissible Overhang. Any load overhang beyond the vehicle bed shall be not more than one-third the length of a box.

(3) Placement of Partial Loads. A partial load shall either be placed flush against a bulkhead (Figure 2); or centered, when the remaining space on the bed is 4 feet or less (Figure 3); or even with the end of the bed where the winches are mounted, when the remaining space is more than 4 feet (Figure 4).

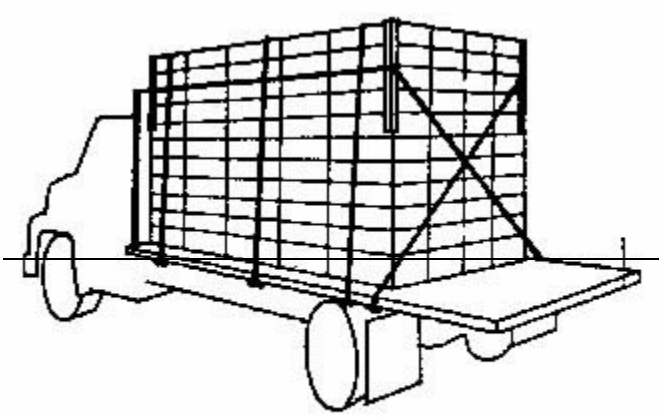


Fig. 2. Partial Load with Bulkhead
Illustrative of Section 1373(a)(3)

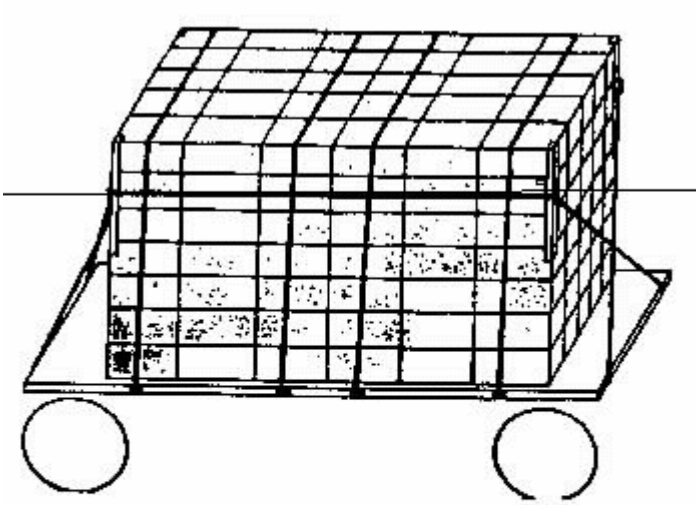


Fig. 3 Partial Load—Remaining Space 4 Feet or Less
Illustrative of Section 1373(a)(3)

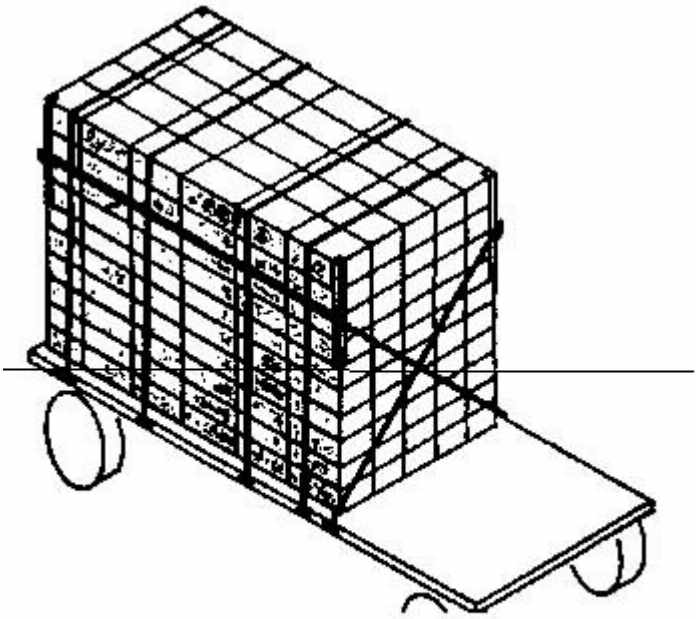


Fig. 4. Partial Load—Remaining Space More than 4 Feet
Illustrative of Section 1373(a)(3)

~~Note: Authority and reference cited: Section 31530, Vehicle Code.~~

**1374.** Securement of Loads.

The following provisions shall govern the securement of loads of empty wooden boxes.

(a) Uniform Size Boxes. Boxes of uniform size shall be secured to vehicles either by applying longitudinal or perimeter binders with crossbinders.

(1) Longitudinal Binders. When used in conjunction with V-boards, bulkheads, or racks at both ends of the load to provide longitudinal restraint, longitudinal binders shall be applied in pairs.

(A) V-boards shall be centered over the ends and within 6 inches of the corners of the load. (Figure 5)

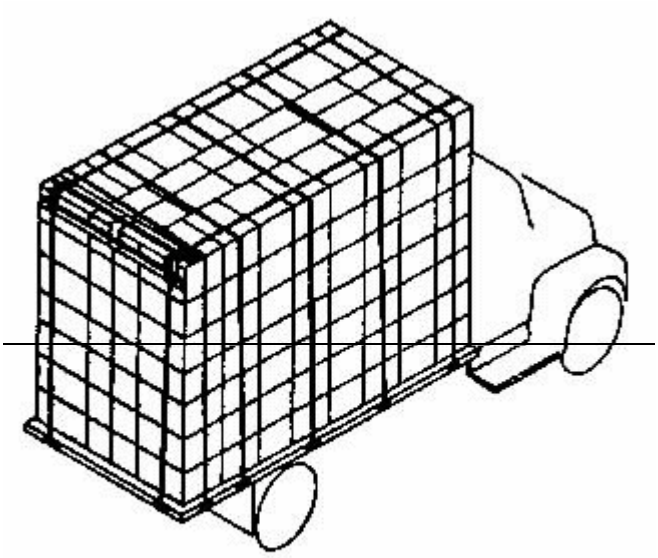


Fig 5. Longitudinal Binders—Used in Conjunction with Front Bulkhead and Rear V–Board Illustrative of Section 1374(a)(1)(A)

(B) The load shall be solidly abutted against a bulkhead or rack at least as high as the vertical midpoint of the top course of boxes in abutting stacks. (Figure 6)

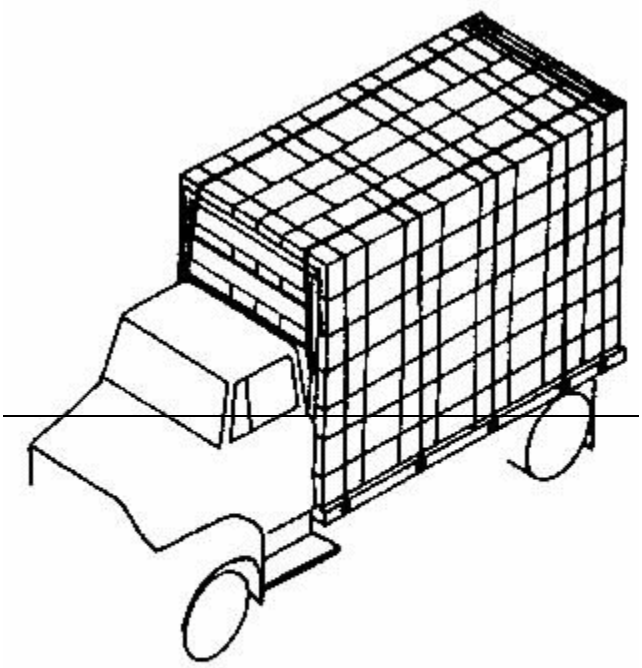


Fig. 6. Longitudinal Binders · Used in Conjunction with Front Bulkhead and Rear V–Board Illustrative of Section 1374(a)(1)(B)

~~(2) Perimeter Binders. Perimeter binders shall be used in pairs and applied as follows:~~

~~(A) Perimeter binders shall be fastened to opposite points on the front or side of the vehicle bed near the front corners, cross the front of the load through the front corner iron hooks, extend the length of the load on each side and parallel to the vehicle bed, pass through the rear corner iron hooks, cross the rear of the load, and shall be fastened to the rear or sides of the vehicle bed near the rear corners. (Figures 7, 8)~~

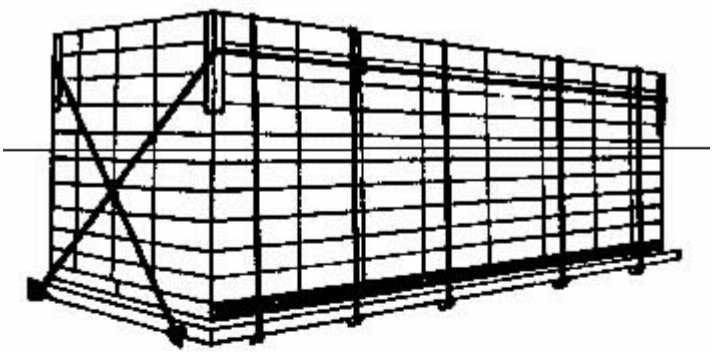


Fig. 7. Perimeter Binders Fastened at Sides of Ends of Load Illustrative of Section 1374 (a) (2) (A)

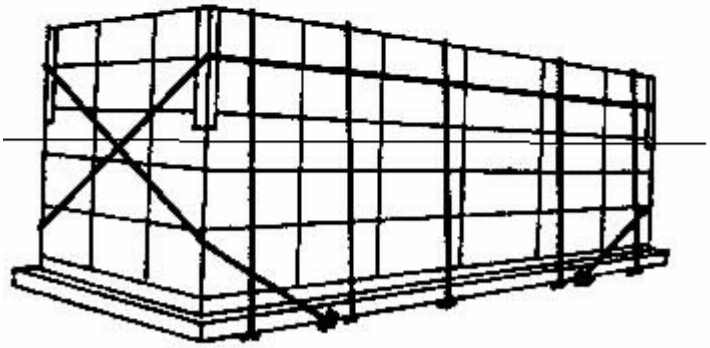


Fig. 8. Perimeter Binders Fastened at Sides of Load Illustrative of Section 1374(a)(2)(A)

~~(B) When the remaining space on a vehicle bed with a partial load is more than 4 feet, crossbinders shall be used in conjunction with perimeter binders, which shall be fastened on opposite sides of the vehicle bed not more than 28 inches beyond or more than 60 inches before the rear end of the load. The load shall be solidly abutted against the bulkhead, or if no bulkhead, even with the end of the bed where winches are mounted. (Figure 4)~~

~~(3) Crossbinders. Crossbinders shall be used in addition to longitudinal or perimeter binders to secure top boxes at the sides of the load by one of the following methods: (A) Either one crossbinder shall be applied across the front row, one across the rear row, and intermediate crossbinders shall be placed, as uniformly as is practicable, along the length of the load with at least one binder for each 6-foot load length;~~

(B) Or, when used over V-boards, at least one crossbinder shall be applied over the approximate midpoint of V-boards less than 5 feet in length; at least two, uniformly spaced, over 5- to 8-foot V-boards; and at least three, uniformly spaced, over V-boards exceeding 8 feet in length.

(b) Nonuniform Size Boxes. Boxes of nonuniform size shall be secured to vehicles by crossbinders for lateral restraint and by crosstied binders (of a strength specified for crossbinders in Section 1372(c)) for longitudinal restraint as follows:

(1) Lateral Restraint. Lateral restraint shall be provided by the application of at least one crossbinder over each lateral row of boxes.

(2) Longitudinal Restraint. Without a bulkhead, longitudinal restraint shall be provided at each end of the load by not less than two binders extending from and attached to opposite sides of the vehicle bed, one diagonally crosstied over the top end of the load near the corner, the other cross tied around the end of the load below the top corner. With a bulkhead, at least two such diagonally crosstied binders shall extend over the top and rear end of the load. (Figure 9)

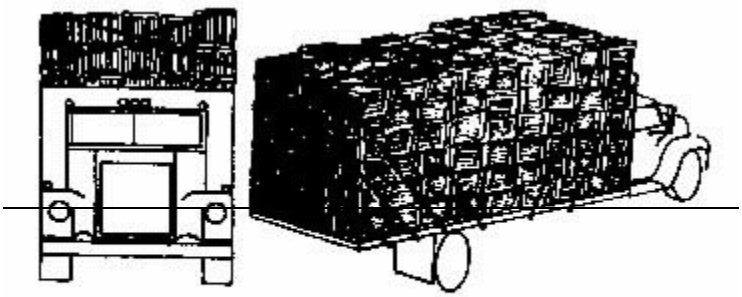


Fig. 9. Longitudinal Restraint for Nonuniform Size Boxes
Illustrative of Section 1374(b)(2)—Crossbinders not shown

Note: Authority and reference cited: Section 31530, Vehicle Code.

**1375**. Alternate Method of Compliance.

Application for any deviation from specific portions of these regulations shall be made in such form as may be prescribed by the department. In considering the application, the department will determine whether the suggested alternate method carries out the original intent of the regulation. Such alternate method shall be used only after application has been made to and written approval has been issued by the department. A copy of the written statement granting departmental approval of the alternate method of compliance shall be carried in each vehicle or combination of vehicles operating under such authorization and shall be presented for inspection immediately upon request by an authorized employee of the department, or any regularly employed and salaried police officer or deputy sheriff.

Note: Authority and reference cited: Section 31530, Vehicle Code.

## ARTICLE 9. DETACHABLE FREIGHT VANS OR TANK CONTAINERS -LOADING, SECUREMENT, AND TRANSPORTATION

**1400**. Scope of Regulations.

This article shall apply to the loading, securement, and highway transportation of detachable freight vans or tank containers designed to be carried on frame- or chassis-type vehicles. The provisions of this article do not apply to collapsible containers as defined in Section 1250(a) of this code or to container used exclusively in waste disposal operations.

| *Subject* | *Section* |
|---|---|
| Definitions | 1401 |
| Stability of Loads | 1402 |

Note: Authority and reference cited: Section 31540, Vehicle Code.

**1401**. Definitions.

The following definitions shall apply for the purpose of this article.

(a) Detachable Freight Vans or Tank Containers. "Detachable freight vans or tank containers" are readily removable cargo structures which are designed to be carried on frame- or chassis-type vehicles and are not welded or permanently bolted to the running gear or chassis of the transporting vehicle.

(b) End Binder. An "end binder" is a binder which passes through the upper or lower corner castings of a container and is attached to opposite sides of a vehicle.

(c) Bolster. A "bolster" is a structural member or device attached to the frame or bed of a vehicle to support or restrain a container.

(d) Buckle. A "buckle" is a device used to connect two pieces of webbing to form a load binder.

(e) Locking Device. A "locking device" is a mechanical apparatus used to secure a container to the vehicle.

(f) Lower Corner Casting. A "lower corner casting" is a locking device receptacle designed into the lower corner of a container.

(g) Upper Corner Casting. An "upper corner casting" is a device or receptacle used on the upper corner of a container for lifting and lowering it with a crane, hoist, or other machine.

Note: Authority and reference cited: Section 31540, Vehicle Code.

**1402**. Stability of Loads.

Containers shall be well balanced and positioned on the vehicle so that the load is stable without binders or other securement devices. All loading and securement requirements shall be met prior to a vehicle entering a highway and shall be so maintained en route by periodic inspection of the load. If there is any evidence of load instability, or if any part of the load projects beyond the legal width limits of the vehicle, the vehicle shall be driven from the roadway and shall not again be moved on the highway until corrective load or securement adjustments are made to conform to these regulations.

Note: Authority and reference cited: Section 31540, Vehicle Code.

**1403**. Binder Requirements.

Binders used for the loading, securement, and transportation of detachable freight vans and tank containers shall meet the requirements of Sections 1300 through 1305 of this code, shall have a breaking strength or load rating of not less than 11,500 pounds, and shall be limited to chain, wire rope, and synthetic webbing.

Note: Authority and reference cited: Section 31540, Vehicle Code.

**1404**. Transportation and Securement on Frame- or Chassis-Type Vehicles.

Van and tank containers shall be secured to frame- or chassis-type vehicles to prevent lateral, longitudinal, and vertical shifting. Following are examples of methods of securement which will comply with this requirement. Other methods of securement may be used provided each container is protected against lateral, longitudinal, and vertical shifting.

(a) Locking Devices. Interlock the container to the chassis with three locking devices. (Figure 1)

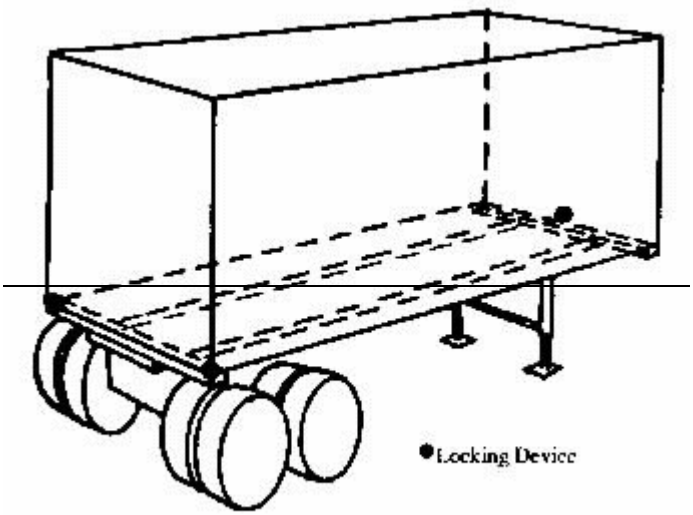



Fig. 1. Illustrative of Section 1404(a)

(b) Locking Devices to Prevent Lateral and Vertical Shifting. Position the container against front and rear bolsters to prevent longitudinal shifting and use two locking devices to prevent lateral and vertical shifting. (Figure 2)

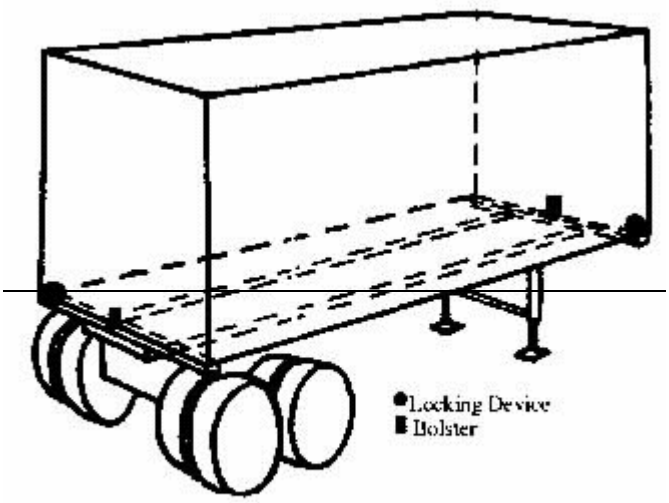



Fig. 2. Illustrative of Section 1404(b)

~~(c) Locking Devices to Prevent Longitudinal and Vertical Shifting. Position the container against bolsters to prevent lateral shifting and use two locking devices to prevent longitudinal and vertical shifting. (Figure 3)~~

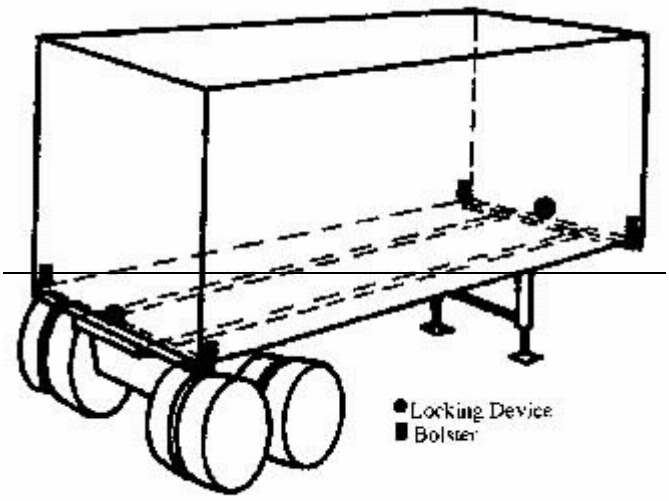



Fig. 3. Illustrative of Section 1404(c)

~~Note: Authority and reference cited: Section 31540, Vehicle Code.~~

**1405**. Transportation and Securement on Flatbed Vehicles.

Van and tank containers shall be secured to flatbed vehicles to prevent lateral, longitudinal, and vertical shifting and shall comply with the overhang restrictions contained in following subsection (f). Following are examples of methods of securement which will comply with the load securement requirements of this article. Other methods of securement may be used provided each container is protected against lateral, longitudinal, and vertical shifting.

(a) Locking Devices. Secure the container to the vehicle with three locking devices. (Figure 4)

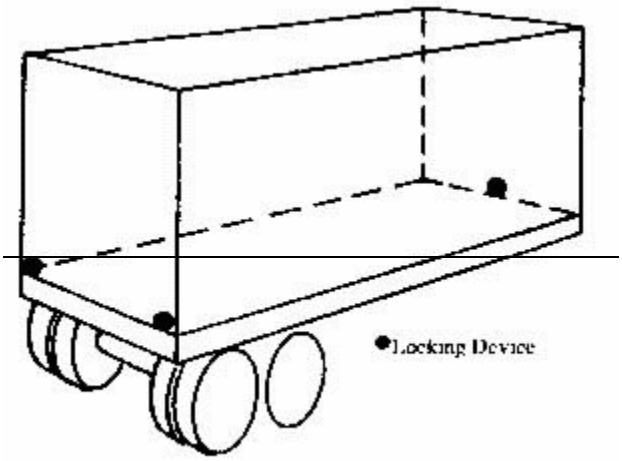



Fig. 4. Illustrative of Section 1405(a)

(b) Locking Devices and Crossbinders. Secure the container to the vehicle with two crossbinders and two locking devices. (Figure 5)

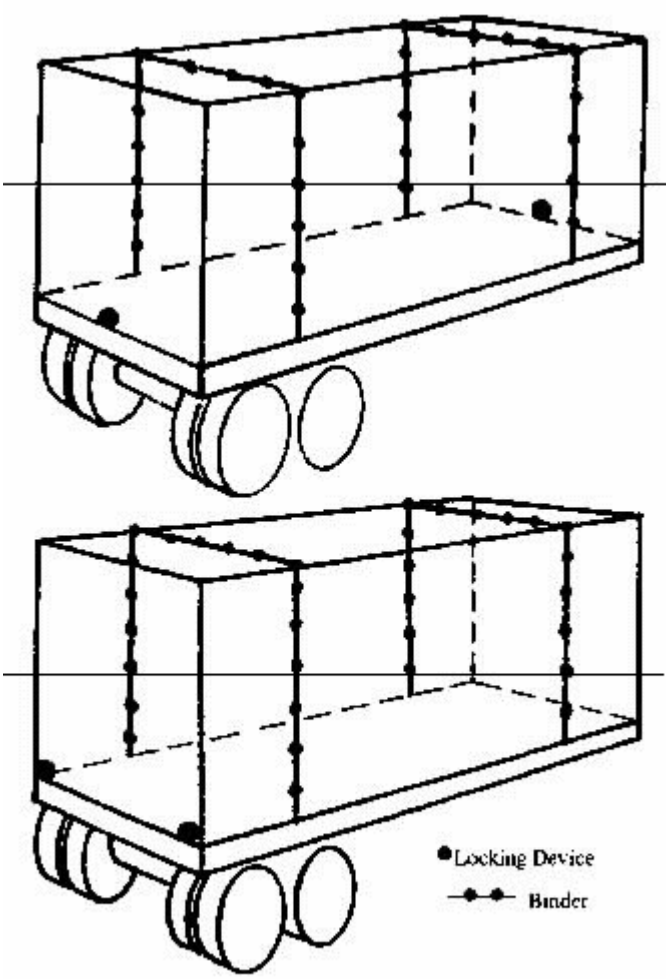



Fig. 5. Illustrative of Section 1405(b)

~~(c) End Binders. Secure the container to the vehicle with two end binders by applying one through corner castings and around the front end of the container and the other through corner castings and around the rear end of the container. (Figure 6)~~

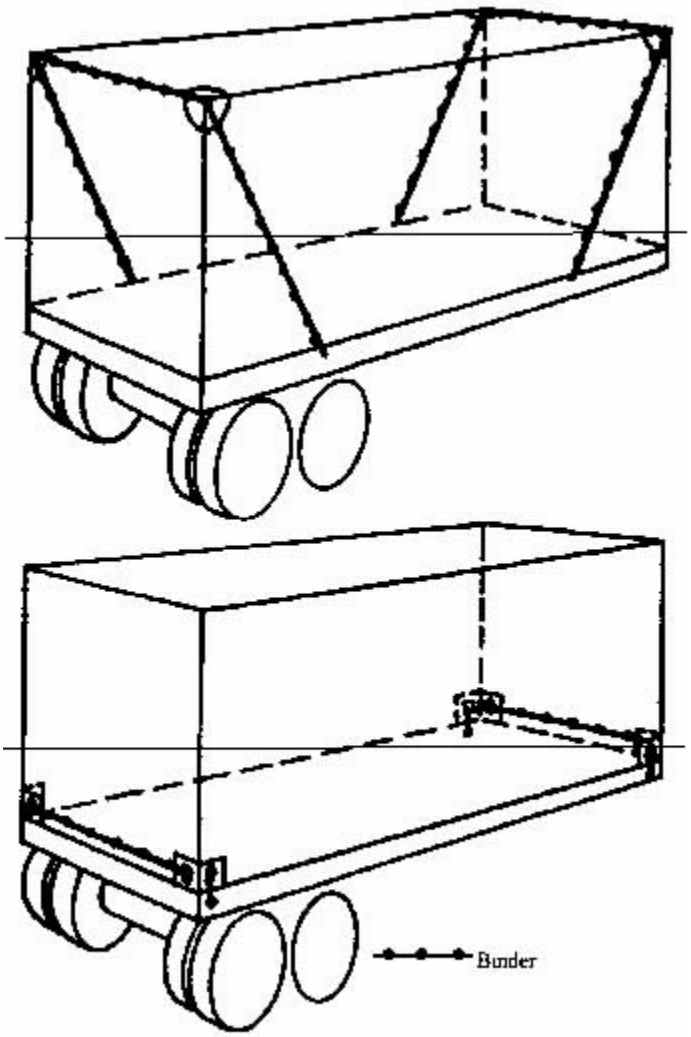



Fig. 6. Illustrative of Section 140S(c)

~~(d) Longitudinal Binders and Crossbinders. Secure the container to the vehicle with two longitudinal binders and two crossbinders. (Figure 7)~~

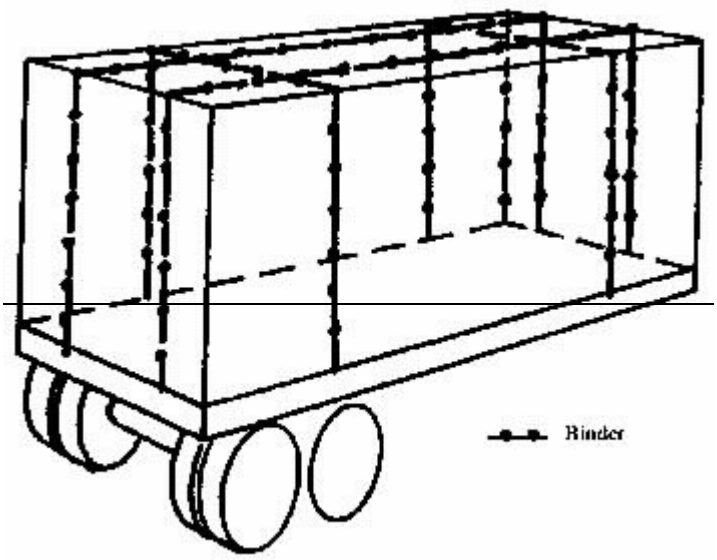



Fig. 7. Illustrative of Section 1405(d)

~~(e) Securement of Multiple Container Loads. Figures 8 through 10 illustrate methods of securement for multicontainer loads which will comply with this article. Other methods of securement may be used provided each container is protected against lateral, longitudinal, and vertical shifting.~~

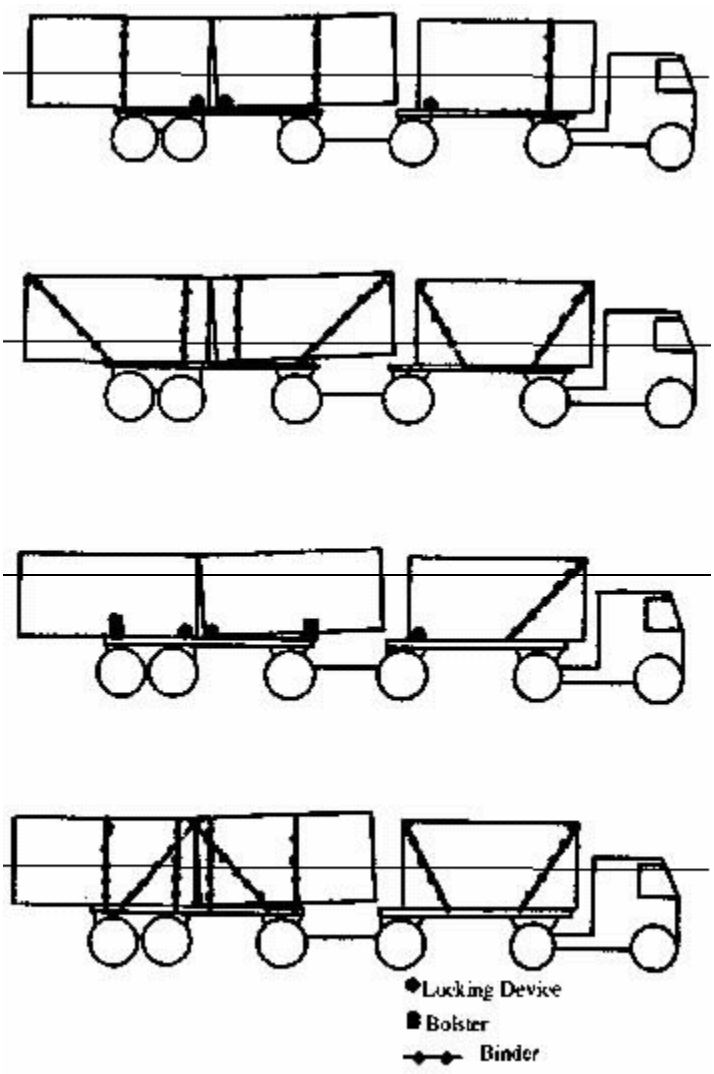



Fig. 8. Illustrative of Section 1405(e)

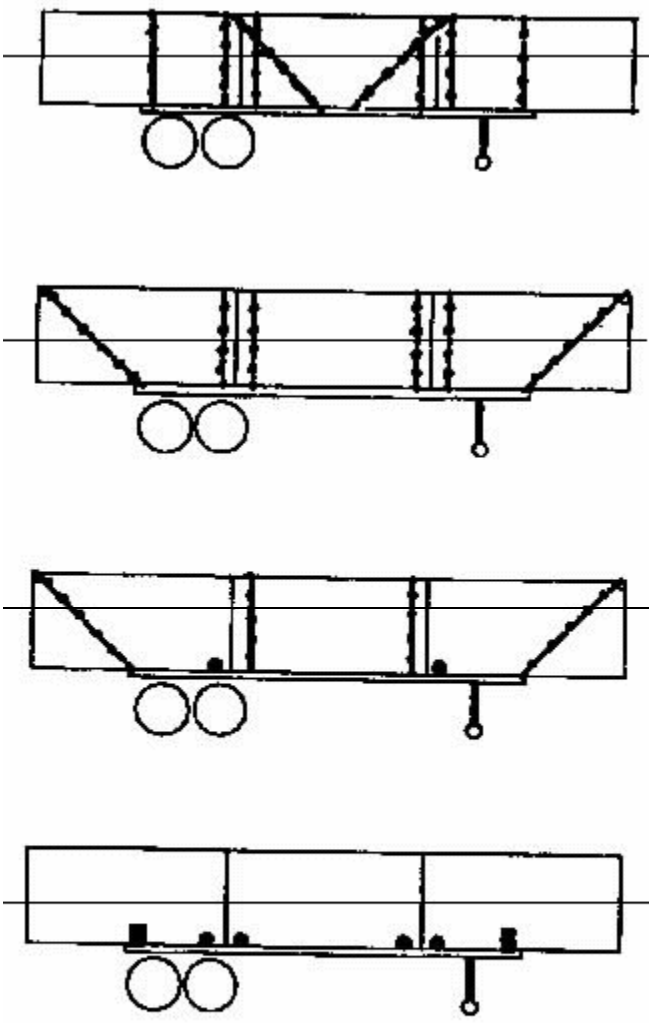



Fig. 9. Illustrative of Section 1405(e)

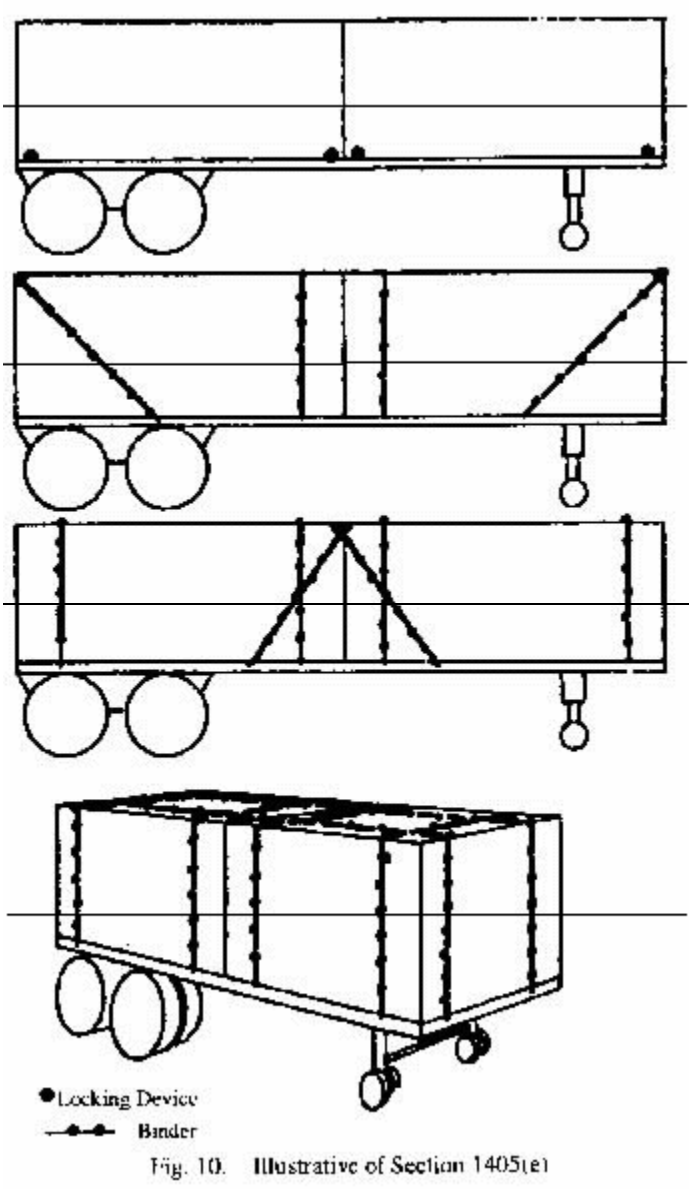


Fig. 10. Illustrative of Section 1405(e)

~~(f) Load Projection. Subject to more restrictive limitations in Vehicle Code Section 35410, containers which project beyond the front or rear end of the vehicle bed shall meet the following restrictions:~~

~~(1) No container shall extend by more than one-half its length beyond the front or rear of the transporting vehicle bed.~~

~~(2) Containers shall not be positioned so as to restrict or otherwise interfere with the maximum turning and steering capability of the transporting vehicle or combination of vehicles.~~

~~Note: Authority and reference cited: Section 31540, Vehicle Code.~~

~~**1406**. Alternate Method of Compliance.~~

~~Application for any deviation from specific portions of these regulations shall be made in such form as may be prescribed by the department. In considering the application, the department will determine whether the suggested alternate method carries out the original intent of the regulation. Such alternate method shall be used only after application has been made to and written approval has been issued by the department. A copy of the written statement granting departmental approval of the alternate method of compliance shall be carried in each vehicle or combination of vehicles operating under such authorization and shall be presented for inspection immediately upon request by an authorized employee of the de partment, or any regularly employed and salaried police officer or deputy sheriff.~~

~~Note: Authority and reference cited: Section 31540, Vehicle Code.~~

## ~~ARTICLE 10. LUMBER AND LUMBER PRODUCTS -SAFE LOADING, SECUREMENT, AND TRANSPORTATION~~

**~~1410~~**. ~~Scope of Regulations.~~

~~This article shall apply to the loading, securement, and highway transportation of lumber and lumber products on flatbed vehicles, lumber roll vehicles, and vehicles equipped with lumber rails, except as follows:~~

~~(a) Van Loads. This article shall not apply to loads transported in vans.~~

~~(b) Small Loads. Small loads shall be exempt from these regulations when the load is 4 ft or less in overall height, measured from the top surface of the vehicle bed or rollers, and no solid unit in the load is more than 20 ft in length. Such loads shall be safely loaded and secured, and transported only on a motor vehicle that is not operated in combination with another vehicle.~~

~~Note: Authority cited: Sections 2402 and 29800, Vehicle Code. Reference: Section 29800, Vehicle Code.~~

**~~1411~~**. ~~Definitions.~~

~~The following definitions shall apply for the purposes of this article:~~

~~(a) Lumber. "Lumber" is a product manufactured in a sawmill, or in a sawmill and planing mill, from a log that, when rough, shall have been sawed, edged, and trimmed to at least the extent of showing saw marks on the overall length of the four longitudinal surfaces of each piece but not further manufactured except by cross-cutting, ripping, resawing, and joining crosswise and/or endwise in a flat plane surfacing with or without end matching and working.~~

(1) Lumber includes dressed lumber and worked lumber as defined in the 1968 edition of "Standard Specifications for Grades of California Redwood Lumber," published by the Redwood Inspection Service, 617 Montgomery Street, San Francisco, CA 94111. Lumber also includes cants and slabs.

(2) Lumber does not include lumber products or manufactured wood products.

(b) Lumber Products. "Lumber products" are wood products other than logs, poles, or lumber, including but not limited to veneer, plywood, hardboard, particle board, lath, shakes, shingles, box shook, wedge slices, split stakes or posts, and peeler cores. Lumber products do not include manufactured wood products such as mouldings, laminated beams, prefabricated walls, and doors.

(c) Load. A "load" consists of one or more units.

(d) Unit. A "unit" is more than one course of lumber or lumber products 5 ft or less in height, compact, and provided with stickers where necessary to insure stability.

(e) Package Unit. A "package unit" is a compact unit less than 5 ft in width and more than 1 1/2 ft in height, and provided with stickers where necessary to insure stability.

(f) Solid Unit. A "solid unit" is a compact unit 5 ft or more in width, and provided with stickers where necessary to insure stability. The width of one course constitutes the load width.

(g) Sticker. A "sticker" is a horizontal wooden separator placed at right angles to the lumber or lumber products in a unit for the purpose of improving the internal stability of the entire unit.

(h) Unit Separator. A "unit separator" is the horizontal or vertical separator between units, or horizontal separator between the load and the vehicle bed.

(i) V-Boards. "V-boards" consist of two parallel pieces of lumber, metal, or other material not more than 12 ft in length and attached near each end by flexible material. "V-bar" has the same meaning as "V-board."

(j) Course. A "course" is one layer of lumber or lumber products, placed side by side.

Note: Authority and reference cited: Section 29800, Vehicle Code.

13 CA ADC s 1411

**1412**. General Provisions.

The following general provisions shall apply to the transportation of lumber and lumber products:

(a) Stability and Security of Loads. Loads shall be well balanced and centered on the vehicle so they are stable without binders. Prior to a vehicle's entering a highway, all binders shall be tightened and locked, and all loading and securement requirements shall be met. The driver shall maintain requirements enroute by periodic inspection of the load. If evidence of load instability occurs, or if any part of the load projects beyond the legal width limit of the load, the vehicle shall be driven from the roadway as soon as practicable and shall not be moved upon the highway again until adjustments bring the load into conformance with this article.

(b) Binder Requirements. Binders used for the loading, securement, and transportation of lumber and lumber products shall meet the requirements of Sections 1300 through 1305 of this title. Unless otherwise provided in this article, binders shall have a breaking strength or load rating of not less than 9,000 lb, and shall be limited to the following types:

(1) Chain

(2) Wire rope

(3) Manila rope

(4) Synthetic fiber rope

(5) Synthetic webbing

(c) Use of Rollers. When rollers are used to support loads, at least two rollers shall be equipped with locks, which shall be fastened during transit.

(d) Maximum Load Height. The height of a load shall not be more than twice its width. Height shall be measured from the vehicle bed or rollers or from the top of horizontal unit separators placed between the load and the vehicle bed.

(e) Maximum Height of Package Unit. The height shall not exceed the width of the base of a package unit by more than 1 1/2 ft. The unit may be banded.

(f) Thickness of Course. The lumber or lumber products in any one course shall be of approximately the same thickness.

Note: Authority and reference cited: Section 29800, Vehicle Code.

**1413**. Racks.

Binders are not required for loads of lumber and lumber products that are contained on four sides by racks in compliance with the following requirements:

(a) Rack Design. Racks shall be of solid construction, or the load so arranged that no unsecured part of it is adjacent to any opening larger than the unsecured part.

~~(b) Rack Securement. Vertical members of side racks shall be inserted in stake pockets on four sides of the load. Vertical members of racks shall fit and conform to the contours of the stake pockets.~~

~~(c) Size and Strength. Vertical members of wooden racks shall be straight-grained, of a size and strength not less than that of 2- by 4-in. (nominal-size) Douglas fir, and free from strength-impairing knots. Horizontal members shall be of 1-in. (nominal-size) lumber of construction grade or better. Racks of material other than wood shall be of a strength not less than that of the wooden racks specified.~~

~~(d) Height of Racks. Racks shall exceed the height of the load.~~

~~(e) Locking Device. Side racks shall be connected to end racks at each top corner by a locking device.~~

~~(f) Connectors Across Top–Loads More Than 5 Ft in Height. When racks are used to restrain loads more than 5 ft in height, at least three pairs of opposite vertical members shall be connected across the top and at the approximate vertical midpoint by a continuous length of 1- by 4-in. (nominal-size) lumber or by chain, wire, or steel strap with a breaking strength of not less than 2,900 lb. Rack connectors do not require approval or certification of minimum strength. Instead of rack connectors, the required number of crossbinders may be used (Section 1417(d)).~~

~~(g) Bulkhead as Front Rack. A bulkhead may substitute for the front end rack if the side racks are connected thereto by a locking device, or by chain, wire, or steel strap material of at least 2,900 lb minimum breaking strength.~~

~~(h) Protection Against Shifting. Outside units of the load shall be in firm contact with racks, or the load shall be secured with materials to prevent its lateral or longitudinal movement.~~

(i) Protection Against Wind. Items subject to being lifted off by wind shall be protected against such lifting by heavy materials placed thereon or by a strong tarpaulin secured to the vehicle at the corners and four outside midpoints of the tarpaulin.

Note: Authority and reference cited: Section 29800, Vehicle Code.

13 CA ADC s 1413

**1414**. V-Boards.

V-boards shall be used when necessary to restrain units of lumber or lumber products. They shall be applied on the edges of a load and beneath binders that pass over the top of the load. V-boards shall comply with the following minimum requirements:

(a) Design. V-boards shall consist of two parallel pieces of lumber, metal, or other material not more than 12 ft in length, attached near each end by flexible material. V-boards more than 6 ft long shall also be attached at the approximate midpoint.

(b) Strength. Materials used in the construction of V-boards shall be of a strength not less than that of 1- by 4-in. (nominal size) Douglas fir, and shall be free of strength-impairing knots.

Note: Authority and reference cited: Section 29800, Vehicle Code.

13 CA ADC s 1414

**1415**. Cab Protection.

A cab guard shall be provided for each motor vehicle transporting lumber or lumber products and shall be installed either on the truck or truck tractor or on a semitrailer. The guard shall

extend to the approximate height and width of the driver's compartment and shall be constructed to protect the driver's compartment.

(a) Materials and Design. Cab guards required by this section shall meet the following minimum specifications (Figure 1):

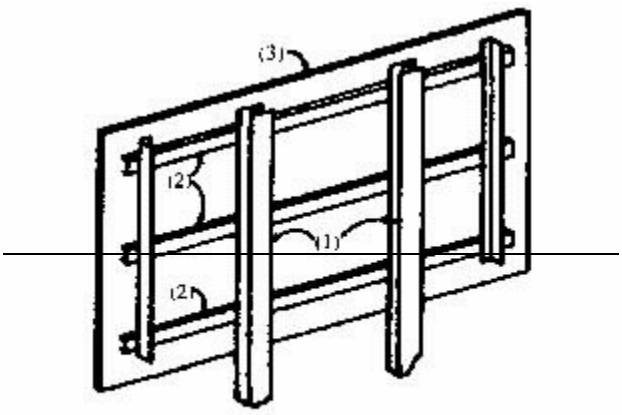



Figure 1. Construction of Cab Guard on Motor Vehicle
(Illustrative of Section 1415(a)(1), (2), (3))

(1) The cab guard shall have at least two vertical posts of steel or iron (pipe, angle, I-beam, channel), each of a strength not less than that of 3-in.- section-depth structural channel steel weighing not less than 5 lb per lineal foot, as specified in American Society for Testing Material Standards (ASTMS) Specification A36, A53, or A120.

(2) The cab guard frame shall consist of at least two vertical members and at least three full-width horizontal members equally spaced and joined to the vertical posts prescribed in subsection 1415(a)(1). (This requirement does not apply to cab guards manufactured prior to October 1, 1966, constructed in the "butterfly-reach support" design with two lateral cross-members and additional upper and lower curved partial members.) All material used shall have a strength not less than that of 1-1/2 -in.-section-depth angle steel weighing not less than 1.75 lb per lineal foot, as specified in ASTMS Specification A36, A53, or A120.

(3) If the horizontal members are not sufficient in number and not close enough to prevent penetration by any part of the load, the guard shall be covered by material (lumber, plywood, expanded metal, aircraft landing mat, etc.), of a strength not less than that of 3/4 in. exterior grade plywood.

(4) Designs other than those specified may be used, provided they have a strength not less than that of the specified materials and the manufacturer has furnished the department a certificate to that effect.

(b) Anchoring and Bracing. The cab guard shall be securely anchored to the frame or deck of the motor vehicle and shall be braced to resist displacement in the event of load shifting. The materials used to anchor the guard to the vehicle shall have a strength not less than that specified for vertical posts.

(c) Cab Guard on Combinations. When the cab guard is secured to the front of a semitrailer, the following requirements shall be met (Figure 2):

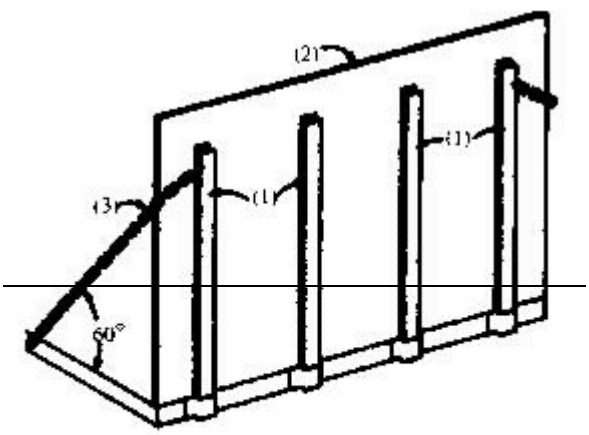



Figure 2. Construction of Cab Guard on Semitrailer
(Illustrative of Section 1415(c)(1), (2), (3))

(1) The cab guard shall include at least four uniformly spaced stakes of steel or other material with a combined strength not less than that of the vertical posts specified in subsection 1415(a)(1). All stakes shall be securely fitted in steel pockets.

(2) The stakes shall be joined by material that extends the full width of the stakes and from the stake tops to the vehicle bed. This material, which may consist of more than one piece, shall have a strength not less than that of 3/4 -in., exterior grade plywood and shall be securely attached to each stake.

(3) To resist displacement in the event of load shifting, the cab guard shall be restrained longitudinally by wire rope, chain, or other metal material with a minimum breaking strength of 11,500 lb, and shall be attached at or near the top of each outer stake of the guard and to an anchor point on each side of the vehicle. The angle at the anchor point shall not exceed 60 degrees.

(4) The cab guard shall extend to the approximate height and width of the cab of the towing vehicle when the semitrailer is loaded and properly coupled to the towing vehicle.

Note: Authority and reference cited: Section 29800, Vehicle Code.

13 CA ADC s 1415

**1416**. Loading and Securement of Lumber and Lumber Products.

The following provisions shall govern the loading and securement of lumber, ties, fence posts, veneer, stakes, wedge slices, and similar products. The provisions do not apply to peeler cores, box shook, bundled lath, plywood, particle board, or shakes and shingles except as specified in Section 1417.

(a) Stickers. Except when alternate courses are laid at an angle of 90 degrees to provide stability of units of palletized short lengths, stickers shall be located at a point not less than 1 ft from each end of the shortest length in the unit. A set of stickers shall consist of at least two stickers for units not more than 16 ft in length, and at least three stickers for longer units (Figure 3).

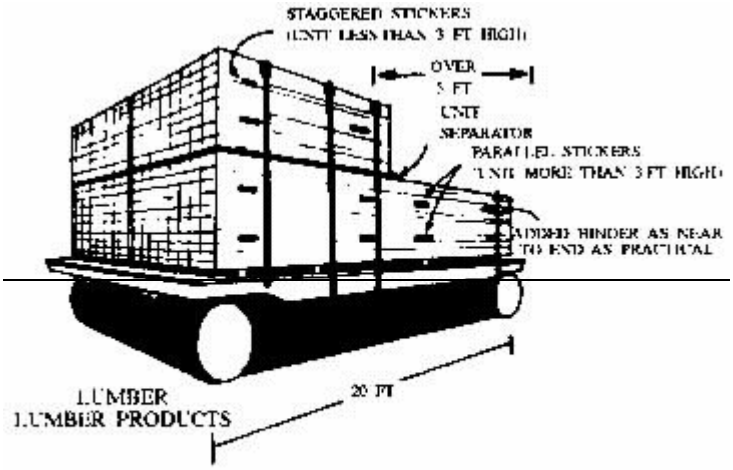



Figure 3. Stickers, Separators, and Binders
(Illustrative of Section 1416(a), (b), (d))

(1) When stickers are required, they shall be of sufficient size and strength to insure unit stability.

(2) Stickers shall extend the full width of the unit and shall be uniformly spaced, one above the other in parallel sets or individually staggered, whichever arrangement provides the most stability.

(3) Stickers may be lapped if the lap is 12 in. or more.

(4) Units less than 3 ft in height shall have stickers placed between the approximate vertical midpoint and the upper third of the unit.

(5) Units 3 ft or more in height shall have stickers at approximately one-third and two-thirds of the distance from the bottom of the unit, unless the width of the product making up the course exceeds 6 in., in which case stickers need only be placed between the approximate vertical midpoint and the upper third of the unit.

(6) Stickers are not required in units composed of random width lumber stacked in such manner that the boards are interlocked and stable without tickers, or in units composed of veneer.

(b) Unit Separators. Unit separators shall be located not less than 1 ft from each end of the shortest length in the face of the unit touching the separator. There shall be at least two separators for each unit not more than 12 ft in length. Units more than 12 ft in length shall have at least three separators spaced uniformly over the entire length of the unit (Figure 3).

(1) Unit separators shall be placed at right angles to unit lengths. A separator shall have units resting against its broader side, shall be in one piece without splicing, and shall extend to the full width or height of the load, except as follows:

(A) When differences in height of package units render impractical full-load-width separators at intermediate tiers, units shall be either individually banded or otherwise bound or braced to prevent dislocation in addition to being secured by the required number of load binders.

(B) When package units approximately 4 ft in width are individually banded or otherwise bound or braced, horizontal separators need extend only to the approximate width of the units.

(2) Solid unit loads shall contain horizontal unit separators located at levels not more than 5 ft apart, measured from the bottom of the load.

(3) In combination unit loads, package units shall rest upon a solid unit and there shall be horizontal separators between the solid unit and the package units.

~~(4) In loads consisting of stacked package units, each unit shall be separated from the others by horizontal unit separators.~~

~~(5) In loads consisting of package units placed side by side, units shall be restrained by vertical separators unless the abutting surfaces are in firm contact with each other.~~

~~(c) Palletizing of Short Lengths. Solid or package units of lumber or lumber products governed by this section and are 3 ft or less in length shall be contained on four sides by racks unless they are supported on pallets, platforms, or skids, and comply with the following requirements:~~

~~(1) In lieu of stickers, alternate courses may be laid at an angle of 90 degrees to provide stability. If stickers are used, they may be placed less than 1 ft from the end of a unit provided there are two stickers for each unit length.~~

~~(2) Each stack shall be tension-tied to the pallet by at least one high-tension steel band measuring not less than 1/2 by 0.020 in. and running at right angles to the unit length.~~

~~(d) Number of Binders Required. The minimum number of binders required is determined by the height and length of the load.~~

~~(1) In no event shall any top unit in a load be secured by less than two binders.~~

~~(2) The minimum number of binders required to secure a stack of units is determined by the length of the top unit(s) in the stack, except that when any unit extends 5 ft or more beyond the last point of securement by required binders, an additional binder shall be applied as near as practical to the end of that unit (Figures 3, 8). Any portion of the unit that overhangs the vehicle bed shall be disregarded in determining this 5 ft measurement.~~

~~(3) Units 6 ft or less in length and uniform in height may be secured as one unit by the application of required binders over pairs of V-boards which shall be the approximate length of the units which they restrain.~~

~~(A) At least two crossbinders shall be applied over each V-board 8 ft or less in length.~~

~~(B) At least three crossbinders shall be applied over each V-board more than 8 ft in length.~~

~~(e) Load Height. Loads 5 ft or less in height (Figure 4) shall be secured to the vehicle with at least two binders for each unit length. Loads more than 5 ft in height shall be secured to the vehicle by at least three binders per unit length (Figures 5, 7, 8). A minimum of two binders per unit length may be used to secure loads more than 5 ft in height consisting of the following:~~

~~(1) Top Units 8 Ft or Less in Length. Units 8 ft or less in length loaded on top of bottom units not less than 16 ft in length (Figure 6); or~~

~~(2) Top Units Not More Than 6 Ft in Length. Top units not more than 6 ft in length not restrained by V-boards.~~

~~(f) Load Length. Units more than 12 ft in length shall be secured to the vehicle by at least three binders per unit length (Figure 4).~~

~~(g) Binder Spacing. Binders shall be located not less than 1 ft from the end of the shortest length in the top course or outside tier of the unit secured. When more than two binders are applied over one unit length, additional binders shall be as uniformly spaced between the end binders as practical (Figures 7, 8).~~

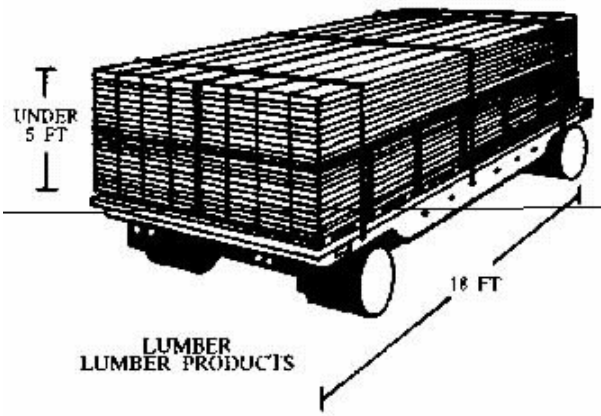



Figure 4. Loads 5 Ft or Less in Height. Length of top unit(s) determines number of binders for low loads, regardless of number of lower units. (Illustrative of Section 1416(d)(2),(e),(f))

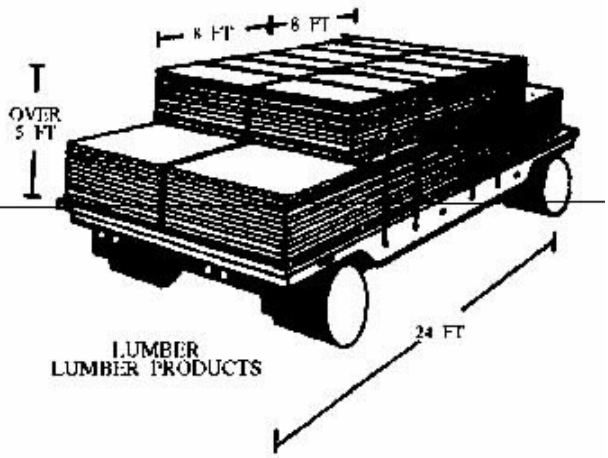



Figure 6. Two Binders on Short Units Atop Long. Only two binders are required for short units firmly supported by units at least 16 ft. (Illustrative of Section 1416(e)(1), (2))

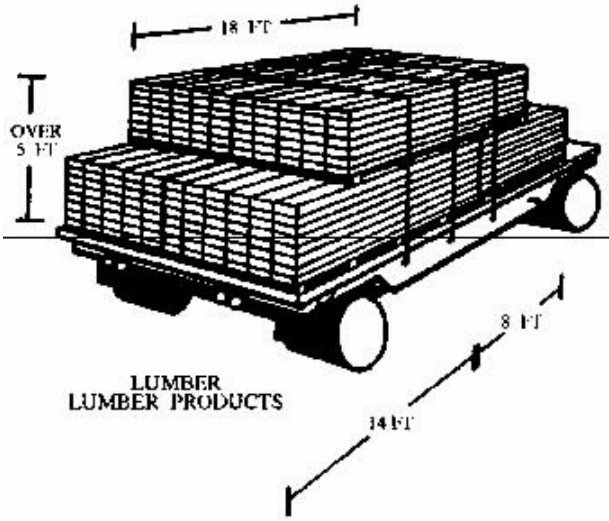



Figure 5. Three Binders on Loads Over 5 Ft in Height. Bottom units do not extend 5 ft from last point of securement. (Illustrative of Section 1416(d)(2), (f))

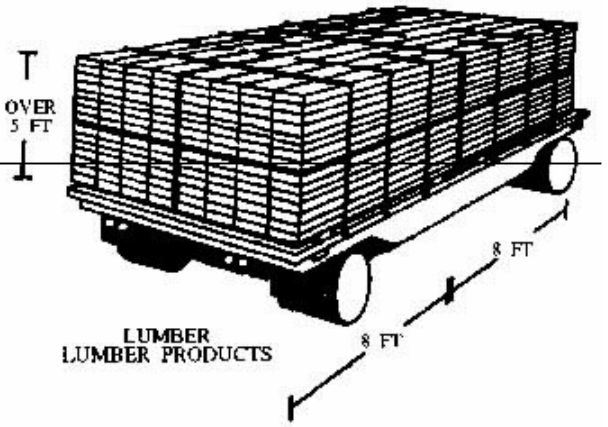



Figure 7. Three Binders for Units Over 6 Ft in Length, Over 5 Ft in Height, and Not Loaded on Units of 16 Ft or Longer. (Illustrative of Section 1416(e)(1), (2))

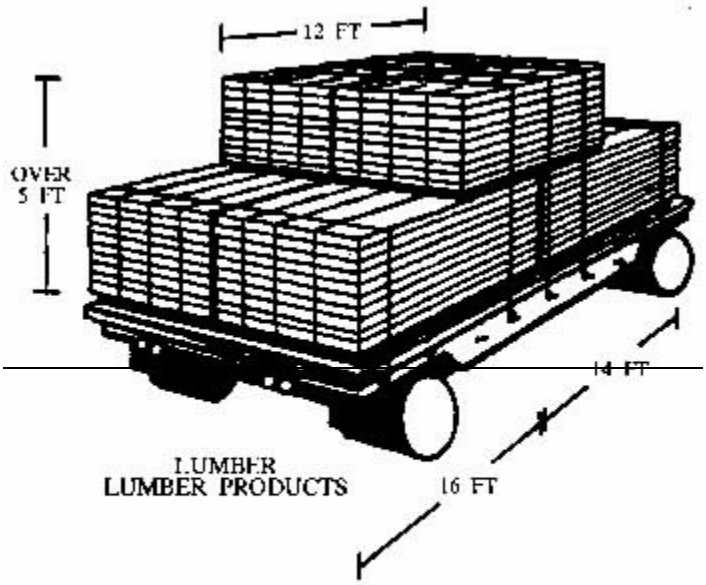



Figure 8. Three Binders for Units Over 5 Ft in Height. One additional binder is required for loads extending 5 ft or more beyond the last point of securement. (Illustrative of Section 1416(d)(2), (e))

~~Note: Authority and reference cited: Section 29800, Vehicle Code.~~

~~13 CA ADC s 1416~~

~~**1417**. Loading and Securement of Specific Lumber Products.~~

~~The following provisions shall govern the loading and securement of peeler cores, box shook, lath, plywood, shingles and shakes, and similar lumber products.~~

~~(a) Peeler Cores. Except when transported on bunks with approved bunk stakes, peeler cores shall be loaded and secured either as package units, in accordance with following subsection (1), or shall be restrained by stakes in accordance with following subsection (2):~~

~~(1) Package Units. Package units less than 10 ft in length shall be unitized by a least one band of high-tension steel not less than 1 1/4 by 0.031 in. or at least two bands not less than 3/4 by 0.031 in. Package units 10 ft or more in length are required to be unitized by at least two bands of high-~~

~~tension steel not less than 1 1/4 by 0.031 in. Chain or wire may be used, provided it has at least the breaking strength of the steel bands specified.~~

~~(A) Package units are exempt from sticker requirements, but shall be stabilized by unit separators in accordance with the provisions of subsection 1416(b).~~

~~(B) Loads of package units shall be secured to the vehicle by not less than two crossbinders per unit length.~~

~~(2) Stakes. If wooden stakes are used, they shall be straight-grained, of a size and strength not less than that of 2- by 4-in. (nominal-size) Douglas fir, and free from strength-impairing knots. Stake material other than wood shall be of a strength not less than that of wooden stakes. Stakes shall be spaced at least 12 in. but not more than 30 in. from the ends of each unit. Loads restrained by stakes shall be secured to the vehicle by not less than two crossbinders per unit length.~~

~~(3) Bunks. Peeler cores transported on vehicles equipped with bunk stake assemblies meeting the requirements in Article 1 of this title, beginning with Section 900, shall be loaded and secured like poles, in accordance with Section 1338 of this title, except that loads of peeler cores 12 ft. or less in length require only three binders.~~

~~(b) Box Shook. The following provisions shall govern the loading and securement of box shook:~~

~~(1) Loading on Pallets, Platforms, or Skids. Unless contained on four sides by racks, box shook shall be loaded like package units on pallets, platforms, or skids:~~

~~(A) Each unit shall have sets of stickers at approximately one-third and two-thirds of the distance from the bottom of the unit, unless the width of the product making up the course exceeds 6 in., in which case stickers need be placed at only the approximate vertical midpoint.~~

~~(B) Stickers may be placed less than 1 ft from the ends of the units.~~

(C) Stickers are not required when alternate courses or securely tied bundles of box shook are laid at an angle of 90 degrees, thereby interlocking to provide stability, or when each stack is tension-tied to the pallet, platform, or skid by at least one high-tension steel band measuring not less than 1/2 - by 0.020 in. and running at right angles to the unit length and at the approximate midpoint of the stack.

(D) Single units are not limited in height except as provided in Section 35250 of the Vehicle Code, but each unit in a stack shall be not more than 5 ft in height, and a pallet, platform, or skid may serve as the required separator between such units.

(2) Binding. Box shook units or stacks shall be restrained and secured by the use of V-boards or bulkheads in conjunction with binders (Figures 9, 10, 11). V-boards shall be the approximate length of the unit or units which they restrain.

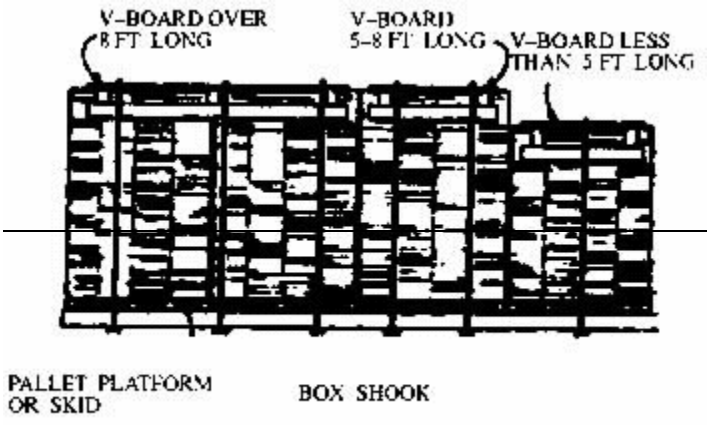



Figure 9. Use of V–Boards and Binders Section 1417(b)(2))

(A) At least one crossbinder shall be applied over the approximate midpoint of each V-board less than 5 ft in length.

(B) At least two crossbinders shall be applied over each V-board 5 to 8 ft in length.

(C) At least three crossbinders shall be applied to each V-board more than 8 ft in length.

~~(D) Loads shall also be restrained longitudinally by at least one longitudinal binder (for each row of units), used in conjunction with V-boards front and rear. Longitudinal binders may be crossed at the ends of the vehicle (Figure 10). The required longitudinal restraint may be provided by containing the ends of such loads with bulkheads, or V-boards restrained by binders with a breaking strength or load rating of not less than 1,350 lb crosstied over each corner of the load (Figure 11).~~

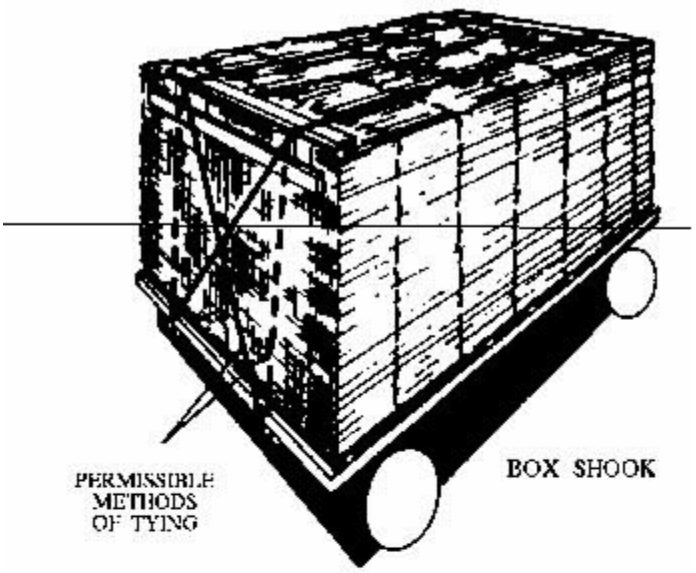



Figure 10. Longitudinal Binders Crosstied Over V–Board. Required crossbinders are not shown. (Illustrative of Section 1417(b)(2)(D))

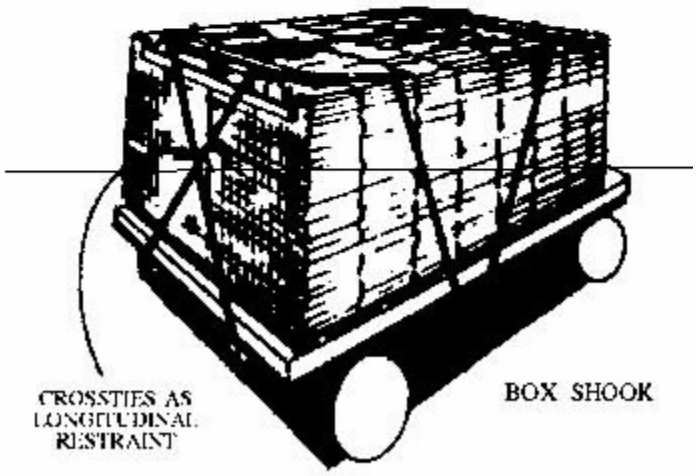



Figure 11. Alternate Longitudinal Restraint with Crossties Over V–Board. The required crossbinders are not shown. (Illustrative of Section 1417(b)(2)(D))

~~(c) Bundled Lath. The following provisions shall govern the loading and securement of lath:~~

~~(1) Loading. Bundled lath shall be loaded longitudinally, laterally, or in alternate courses laid at any angle of 90 degrees to interlock and provide stability. Such loads do not require unit~~

~~separators or stickers, and are not limited in height except as provided in Section 35250 of the Vehicle Code.~~

~~(2) Binding. Unless restrained on four sides by racks or stakes, loads of bundled lath shall be secured by the use of V-boards or bulkheads in conjunction with binders as prescribed for box shook.~~

~~(d) Plywood. Plywood, particle board, hardboard, and other composition sheet boards that contain wood materials and measure, uncut, at least 4 ft in width and 4 to 20 ft in length, shall be loaded and secured in accordance with Section 1416, except that stickers and unit separators are not required.~~

~~(e) Bundled Shingles and Shakes. The following provisions shall govern the loading and securement of bundled shingles and shakes:~~

~~(1) Loading of Bundled Shingles and Shakes. Unless contained on four sides by racks, bundled shingles and shakes shall be loaded as units with alternate courses of bundles laid at an angle of 90 degrees to provide stability by interlocking.~~

~~(A) Stickers and unit separators are not required.~~

~~(B) Units are not limited in height except as provided in Section 35251 of the Vehicle Code.~~

~~(C) When units are stacked, they are limited to a height of 5 ft and a separator, pallet, platform, or skid is required between units.~~

~~(2) Binding of Bundled Shingles and Shakes. The following provisions shall govern the binding of bundled shingles and shakes:~~

~~(A) Loads 11 Bundles or Less in Height. A crossbinder of not less than 5,400- lb breaking strength or load rating shall be applied across each row of bundles so that each outside bundle in the top course is secured by a crossbinder. Loads shall also be restrained longitudinally by at~~

~~least one longitudinal binder (for each row of units), used in conjunction with V-boards front and rear. Longitudinal binders may be crossed at the ends of t he vehicle (Figure 10). The required longitudinal restraint may be provided by containing the ends of such loads with bulkheads, or V-boards restrained by binders with a breaking strength or load rating of not less than 1,350 lb crosstied over each corner of the load (Figure 11).~~

~~(B) Loads More Than 11 Bundles in Height. Loads more than 11 bundles in height shall be restrained and secured by the use of V-boards or bulkheads in conjunction with binders (Figures 9, 10, 11). V-boards shall be the approximate length of the unit or units which they restrain.~~

~~1. At least one crossbinder shall be applied over the approximate midpoint of each V-board less than 5 ft in length.~~

~~2. At least two crossbinders shall be applied over each V-board 5 to 8 ft in length.~~

~~3. At least three crossbinders shall be applied to each V-board more than 8 ft in length.~~

~~4. Loads shall also be restrained longitudinally by at least one longitudinal binder (for each row of units), used in conjunction with V-boards front and rear. Longitudinal binders may be crossed at the ends of the vehicle (Figure 10). The required longitudinal restraint may be provided by containing the ends of such loads with bulkheads, or V-boards restrained by binders with a breaking strength of not less than 1,350 lb crosstied over each corner of the load (Figure 12).~~

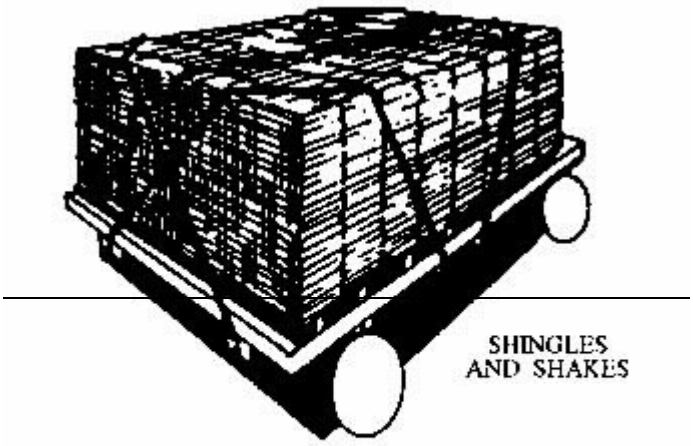



Figure 12. Alternate Longitudinal Restraint for Loads 11 Bundles or Less in Height. Crossties are not permitted on higher loads. Required crossbinders are not shown. (Illustrative of Section 1417(e)(2))

~~(3) Loose Shingles and Shakes. Shingles and shakes that are not bundled are not subject to this article. However, such loads must be safely loaded as required by Section 24002 of the Vehicle Code.~~

~~(f) Other Products. Any lumber product similar to but not specifically identified in Section 1417 shall be transported, loaded, and secured on vehicles within the scope of these regulations in accordance with the provisions of this section which are most applicable to the product in terms of its size or configuration.~~

~~Note: Authority and reference cited: Section 29800, Vehicle Code.~~

**~~1418~~**~~. Alternate Method of Compliance.~~

~~Application for any deviation from specific portions of these regulations shall be made in such form as may be prescribed by he department. In considering the application, the department will determine whether the suggested alternate method carries out the original intent of the regulation.~~

~~Such alternate method shall be used only after application has been made to and written approval has been issued by the department. A copy of the written statement granting departmental approval of the alternate method of compliance shall be carried in each vehicle or combination of vehicles operating under such authorization and shall be presented for inspection upon request by an authorized employee of the department, or any regularly employed and salaried police officer or deputy sheriff.~~

~~Note: Authority and reference cited: Section 29800, Vehicle Code.~~

~~13 CA ADC s 1418~~

## ~~ARTICLE 11~~ ARTICLE 2. LIQUIDS IN COLLAPSIBLE CONTAINERS - SECUREMENT AND TRANSPORTATION

**~~1420~~ 1400**. Scope.

This article shall govern the transportation of liquids in collapsible rubber or plastic containers with a capacity of 120 gal or more on flatbed vehicles.

Note: Authority and reference cited: Section 31540, Vehicle Code.

**~~1421~~ 1401**. Identification.

Each collapsible container shall be clearly and permanently marked by the manufacturer as follows:

(a) Lading. The liquid lading the container is designed to transport shall be identified. No other liquid shall be transported unless the motor carrier first obtains in writing, from the manufacturer

or other competent source, a statement that the container is suitable for the specific alternate lading and the container is so marked.

(b) Maximum Temperature. Each collapsible container designed to transport liquids above ambient temperature shall be labeled near the loading valve: "Maximum allowable cargo temperature is ____ degrees F," as specified by the manufacturer. A container without this label shall transport only ladings at ambient temperature.

(c) Maximum Pressure. Each collapsible container shall be marked by the manufacturer with the maximum pressure, in pounds per square inch, it is designed to withstand. No motor carrier shall transport liquids at a greater pressure.

Note: Authority and reference cited: Section 31540, Vehicle Code.

~~1422~~ **1402**. Retest and Repair.

Each collapsible container shall be retested at least once every two years and shall not be returned to service until it has met the manufacturer's retest standards. Any leakage shall be deemed failure of the retest. Any collapsible container that fails the retest shall be repaired before it is used. All repairs shall conform with the manufacturer's repair standards and shall be made by a qualified person.

Note: Authority and reference cited: Section 31540, Vehicle Code.

~~1423~~ **1403**. Restraints.

The means of attachment of collapsible containers to the vehicle shall be of equal or greater strength than specified by the manufacturer for restraining straps or similar devices.

Note: Authority and reference cited: Section 31540, Vehicle Code.

~~1424~~ **1404**. Transportation of Flammables.

Transportation of combustible or flammable liquids is prohibited .

Note: Authority and reference cited: Section 31540, Vehicle Code.

~~1425~~ **1405**. Alternate Standards.

Whenever this article requires compliance with manufacturer's standards but the motor carrier is unable to determine them, he/she may write the department for permission to comply by using any standards the department finds necessary to protect health and safety.

Note: Authority and reference cited: Section 31540, Vehicle Code.

~~**ARTICLE 15. LUMBER AND LUMBER PRODUCTS -SAFE LOADING, SECUREMENT, AND TRANSPORTATION***~~

~~*See article 10 (Sections 1410-1419)~~

~~Note: Authority cited: Section 2402, Vehicle Code. Reference: Section 29800, Vehicle Code.~~